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❖ GEOGRAPHY ❖



BY JAMES MONTEITH

AUTHOR OF GEOGRAPHIES, ATLASES, MAPS, WALL-MAPS, EASY LESSONS IN POPULAR SCIENCE, AND POPULAR SCIENCE READER

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NEW YORK AND CHICAGO



This Geography differs from other books on the subject, in the following particulars:—

It introduces the subject according to the observational and deductive methods, beginning with known facts, which are used as a stepping-stone to those which are unknown.

It contains physical and industrial geography, systematically arranged and attractively illustrated.

Illuminated pictures of the hemispheres represent the earth as in a painting, or on a relief globe. *The races of mankind, also, appear in colors*,—their features, complexion, and characteristic costumes clearly identifying each.

Its transcontinental views, the largest and most effective wood-cuts ever introduced into any school book, represent the face of the country, with its mountains, plains, valleys, slopes, rivers, cities, etc. They are magnificent panoramas of the continents, from ocean to ocean, designed to teach, at a glance, more physical geography than several pages of text without such aids. (*See pages 30, 94, 100, 118, and 124.*)

To prevent injury to the eye-sight of the teachers and pupils, the portion of each page to be studied is printed from large, clear type, prepared for this work.

The foot-notes furnish the teacher with a fund of important and entertaining information, with which to vary and enliven the recitations. After the class has completed the regular lessons throughout the book, these notes may be used as supplementary lessons.

This plan of text and foot-notes embraces two important features:—first, the labor of the pupil in studying the lessons is considerably diminished, while one third more information is furnished than is found in any other geography of like size and grade.

The pronunciation and definition of difficult words have been inserted. They are in accordance with the new edition of Webster's Unabridged Dictionary (1886).

The Maps contain several novel and valuable features.

The names of the principal cities are engraved in especially large, bold-faced letters, making it easy for the pupil to find those included in the lessons.

Comparative area is shown on the maps of the continents, by diagrams of the State of Kansas, drawn on the scale of each map, and used as a common measure.

Comparative latitude and extent are exhibited on the right and left margins of the maps.

Comparative temperature is marked by means of isotherms and degrees, Fahrenheit, printed in brown. The brown numbers in the inner margin indicate the mean annual temperature of places on the map proper, while those in the outer margin show that of the distant states, countries, etc., therein named. Comparative temperature is indicated, also, by the depth of color in the margins; the deepest red representing the hottest climate.

Comparative time of day throughout the world is given by means of clock-faces in the upper part of each map.

Standard time in the United States is likewise shown. The red lines, separating the time divisions from one another, show where a traveler moves the hands of his watch forward, or backward, according to the direction, east, or west, in which he is going.

Comparative elevation of surface is shown by sectional views under all the maps.

The principal products, sea-ports, highlands, and lowlands, are shown on small Physical Charts.

The language lessons and written exercises furnish easy and interesting topical reviews. (*For models, see pages 32 and 43.*)

The directions in which rivers flow are shown by arrows; *the head of navigation* on important rivers, by anchors.

The population of the largest cities is shown in thousands.

Map Drawing, combined with Comparative Area, is simplified, by the use of a construction frame, whose regular shape and dimensions are easily remembered; it is an oblong diagram, representing the State of Kansas, 200 by 400 miles, in extent. On this frame every state and territory is, in turn, drawn; also, many of the most important countries. (*See page 37.*)

In the design and execution of the Maps and Illustrations, the best educational and artistic talent has been employed; and much credit is due to the efficient art department recently established by the publishers.

J. M.

CONTENTS

	PAGE		PAGE		PAGE
AFRICA	122, 126	FORM AND SIZE OF THE EARTH	7	POPULATIONS	134
ANIMAL KINGDOM,—MAN	21	FRANCE	110	PORTUGAL	98, 113
ASIA	114, 117	GERMAN EMPIRE	106	POSITION OF THE EARTH	91
ATMOSPHERE	18, 19	GEYSERS	16	PROJECTIONS OF MAPS	11
AURORA BOREALIS	19	GLACIERS, ICEBERGS, ETC.	17	PRONUNCIATION OF NAMES	138
AUSTRO-HUNGARIAN MONARCHY	98, 108	GREECE	100, 113	RAIN	16
AVALANCHE	17	HEMISPHERES	24	RIVERS AND RIVER BASINS	17
BALKAN PENINSULA	98, 113	HORIZON	8	RUSSIA	98, 108
BELGIUM	110, 111	INDIA	116, 120	SEASONS	9, 10
BRITISH ISLES	102, 104	INDUSTRIAL GEOGRAPHY	22	SNOW	16
CANADA, DOMINION OF	84, 86	ITALY	98, 109, 110	SOUTH AMERICA	95
CENTRAL AMERICA	88, 91	JAPAN	116, 121	SPAIN	100, 113
CHINA	116, 120	LANGUAGE LESSONS	32, 43	SPHERE	6, 7
CIRCLES, EQUATOR, MERIDIANS	8, 9	LATITUDE AND LONGITUDE	9	SPRINGS	16
CLIMATE	19	LIGHTNING	19	STANDARD TIME	8, 29, 37
CLOUDS, VAPOR, ETC.	15, 16	MAP DRAWING	37, 137	SWEDEN	98, 105
COMMERCIAL MAP	132	MATHEMATICAL GEOGRAPHY	6-11	SWITZERLAND	110, 112
COMPARATIVE AREA	8, 29, 136	MEXICO	88, 90	TIDES	14
CURRENTS OF THE OCEAN	14, 15	MIRAGE	19	TOPICAL REVIEWS (MODELS)	32, 43
DAY AND NIGHT	8, 9	MINERAL KINGDOM	19	TRANSCONTINENTAL VIEWS, 30, 94, 100, 118, 124	
DEFINITIONS,—LAND	11, 12, 13	MOTIONS OF THE EARTH	8	TURKEY, ROUMANIA, SERVIA, ETC.	98, 133
“ WATER	13-17	NETHERLANDS	106, 108	VEGETABLE KINGDOM	20
DENMARK	98, 105, 106	NORTH AMERICA	28, 30	WAVES	14
DEW	15	NORWAY	98, 105	WEST INDIES	88, 89
DISTINGUISHED MEN	42, 57, 61, 69	OCEANIA	129	WINDS, STORMS, ETC.	18, 19
EUROPE	100	PHYSICAL GEOGRAPHY,—GENERAL	6, 11-21	WRITTEN EXERCISES (MODELS)	32, 43
FARTHER INDIA	116, 121	POLITICAL GEOGRAPHY,—GENERAL	6, 21	ZONES	10, 19

UNITED STATES AND TERRITORIES.

	PAGE		PAGE		PAGE
UNITED STATES,—GENERAL	38, 39	IDAHO TERRITORY	80, 82	NEW JERSEY	44, 47
MIDDLE ATLANTIC STATES, PHYS. GEOG.,	46	ILLINOIS	64, 68	NEW MEXICO TERRITORY	74, 79
NEW ENGLAND STATES, “	40	INDIAN TERRITORY	62, 63	NEW YORK	44, 47
NORTH CENTRAL STATES, “	66	INDIANA	64, 69	NORTH CAROLINA	52, 56
PACIFIC STATES AND TERRITORIES “	76	IOWA	70, 72	OHIO	64, 69
SOUTHERN STATES “	54	KANSAS	70, 72	OREGON	80, 82
		KENTUCKY	64, 69	PENNSYLVANIA	44, 47
ALABAMA	58, 60	LOUISIANA	58, 60	RHODE ISLAND	38, 43
ALASKA TERRITORY	34, 83	MAINE	39, 41	SOUTH CAROLINA	52, 56
ARIZONA TERRITORY	74, 79	MARYLAND	48, 50	TENNESSEE	58, 61
ARKANSAS	58, 60	MASSACHUSETTS	38, 42	TEXAS	62, 63
CALIFORNIA	74, 77	MICHIGAN	64, 67	UTAH TERRITORY	74, 79
COLORADO	74, 79	MINNESOTA	70, 72	VERMONT	38, 42
CONNECTICUT	38, 43	MISSISSIPPI	58, 60	VIRGINIA	48, 51
DAKOTA TERRITORY	70, 73	MISSOURI	70, 72	WASHINGTON TERRITORY	80, 82
DELAWARE	48, 50	MONTANA TERRITORY	80, 82	WEST VIRGINIA	48, 51
DISTRICT OF COLUMBIA	48, 51	NEBRASKA	70, 72	WISCONSIN	64, 67
FLORIDA	52, 56	NEVADA	74, 79	WYOMING TERRITORY	80, 82
GEORGIA	52, 56	NEW HAMPSHIRE	38, 42		

RECORD OF RECENT DISCOVERIES AND EVENTS.

THE ARCTIC REGION.—The fate of Sir John Franklin, a celebrated Arctic explorer, who set out from England in 1845, to find a north-west passage, or commercial route, from that country to Asia, but who never returned, has been recently ascertained.

Expeditions had, at various times, been sent in search of him, but it was not until Schwatka, an officer of the United States Army, accomplished his work, that all the members of the Franklin party were known to have perished.

Schwatka met a native chief who had seen either the *Erebus*, or the *Terror*, Franklin's ships; and from him he learned that the ships had been abandoned and sunk, and that some spoons, knives, cooking utensils, books, and records had been taken by the natives. Not knowing the value or use of the books and records, the natives gave them to their children to play with. In this way, they were destroyed. Schwatka found a number of skeletons of the Franklin party, which he buried on King William's Land, south-west of Boothia Peninsula. He reports a temperature in January, 1880, of 70° below zero, and says his white men endured the cold as well as the natives, who call themselves Inuits. His course lay north-west from Hudson Bay.

Lieutenant De Long, in the steam cruiser *Jeannette*, which was fitted out by James Gordon Bennett, entered the Arctic Ocean by way of Bering Strait. After two years, in which the party suffered greatly, the *Jeannette* was crushed in the ice, and sunk in the Arctic, over 400 miles from the coast of Siberia, June, 1881. Some of the party, in an open boat, entered the Lena River, and were rescued. De Long, with a number of his men, reached the shore, but perished from cold and hunger on the frozen wilds of Siberia. Others of his party have never been heard from. De Long discovered three small islands, which he named Bennett, Henrietta, and Jeannette.

In the vicinity of Lady Franklin Bay, several large lakes and mountain ranges have been surveyed.

The highest temperature recorded is 52° Fahr. above zero; the lowest, 66° Fahr. below zero; at this time, the mercury remained frozen for fifteen consecutive days.

The tidal observations revealed some startling facts. At Lady Franklin Bay, the tides came from the north, but at Cape Sabine and Melville Bay, the wave came from the south. The water of the flowing tide at Discovery Harbor was somewhat warmer than that of the ebbing tide. The average temperature of the sea water at Lady Franklin Bay was 29° F., being three degrees below the freezing point of fresh water.

The observations in magnetism were complete and interesting. The results show that in that latitude, the magnetic needle is constantly in a tremor, except during severe storms, when it becomes quiet.

The farthest point north reached by Lieutenant Lockwood and Sergeant Brainard, of the Greeley party, was latitude 83° 24', the highest ever attained by man. Fifteen miles north of this point, a high promontory was discerned, which was named Cape Robert Lincoln. They explored the northern coast of Greenland, 150 miles farther eastward than had ever been before.

This party, when opposite Cape Sabine, were compelled to abandon the small steam launch, and for thirteen days, during a terrible storm, drifted helplessly on an ice-pack. After great suffering, they reached land, and proceeded to Cape Sabine, where they built winter quarters. Here they remained from September, 1883, until July, 1884. Their supply of food became exhausted, and the party suffered horribly during their encampment at this place. All but nine of the party perished from exposure and starvation.

In the meantime, Commander Schley had been ordered to proceed in search of the party, and with three steam vessels, the *Thetis*, *Bear*, and *Alert*, he reached Cape Sabine, in eighteen days from time of leaving Upernavik—a feat unparalleled in the annals of Arctic exploration.

OCEAN HYDROGRAPHY.—The surveys made by the Coast Survey Steamer *Blake* in the Gulf of Mexico, and along the eastern coast of the United States, have established a number of interesting facts.—

The contour of the bed of the gulf reveals the existence of a succession of terraces, or steps, of uniform width and depth, extending around the gulf somewhat like the rows of seats in an amphitheater. The first of these terraces varies from thirty to one hundred miles in width, on which the depth of water is less than 500 feet. Then the bottom slopes quite abruptly to the next terrace, on which the water has an average depth of 2,500 feet. This terrace is not more than twenty or thirty miles wide. The slope to the next terrace is likewise quite steep, on which the average depth of water is about 4,000 feet. The descent to the next terrace is still more abrupt, and the depth of water thereon is about 10,000 feet. This terrace is about one hundred miles in width. The lowest part of the bed is in the center of the gulf, where the depth is about 12,000 feet.

Between Florida and Yucatan, is a submarine ridge on which the depth of water nowhere exceeds 6,000 feet. From the lowest summit of this ridge, the island of Cuba rises with almost precipitous walls. Within five miles of either of the Cuban shores, the depth of water is nearly 6,000 feet, while the slopes toward Yucatan and Florida are uniform and gentle.

The movements of water within the gulf are found to be irregular, and governed, to a great extent, by the wind. Along the northern shores, there is generally an eastward drift of water, caused by the prevailing winds. At times, this drift is not only arrested, but occasionally reversed. The surveys of Commander Bartlett show conclusively that not only has the drift of the gulf no connection with the Gulf Stream, but also that the waters of the Gulf Stream do not enter the Gulf of Mexico. No part of the Gulf Stream passes farther west than Florida Strait.

They further demonstrate that the Gulf Stream, instead of flowing upon a bed of cold water—an opinion which has obtained for many years—really extends to the bottom. In most localities, the bottom is strewn with minute shells brought from the Caribbean Sea. In the vicinity of Hatteras Inlet, the bottom is covered with shells, or skeletons of organisms, brought by the Arctic current, which is here an under-current. Opposite Charleston, there is a strong and well-known surface current from the north. After flowing on the surface for about one hundred miles, it disappears. This phenomenon is believed by Commander Bartlett to be due to the rising of the Arctic current to the surface.

AFRICA.—Central Africa, from the Gulf of Guinea to Victoria Nyanza (Lake), is a vast belt of forest. The vegetation is exceedingly dense and luxuriant, owing to the tropical heat and great rain-fall. Below this, is an open, grassy country, exceedingly fertile and salubrious, and densely populated by a superior race of savages. These natives are handsomely formed, vigorous, and industrious; exhibiting considerable skill in agriculture and manufacturing. Its population is estimated by Stanley to be about 50,000,000. Its products comprise grain, cotton, coffee, tobacco, India rubber, and potatoes. Unlike the India rubber of South America, this milky sap of the India rubber tree will not run into a vessel placed to receive it, because it dries so quickly that it would close the incision in the tree. The Negroes collect it, therefore, by wiping it off with their fingers, and attaching it to their arms, shoulders, and breast, until a thick covering is formed, when it is peeled off from their bodies. The ivory trade is here a very important one, as elephants are found in immense herds. The Congo flows through this region. South of the Congo Basin, the country is comparatively dry, some places being rocky and sandy deserts.

The source of the Congo River, in Africa, is Lake Bangweolo, situated on a high plateau. It was near this lake, that Livingstone, the greatest African explorer, died.

The Congo Free State, in Central Africa, is now independent. Its sovereign is the King of Belgium; and its seat of government, the City of Brussels, the capital of Belgium. (See page 122.)

The kingdom of Burmah, in Farther India, has recently passed under the control of Great Britain. Hitherto it was independent.

Attention is directed to the orthography and pronunciation of many names heretofore misspelled, or mispronounced, as taken from the most reliable sources. These may be found in the Appendix. Among them are the following:

TO THE AUTHOR OF MONTEITH'S GEOGRAPHIES:—

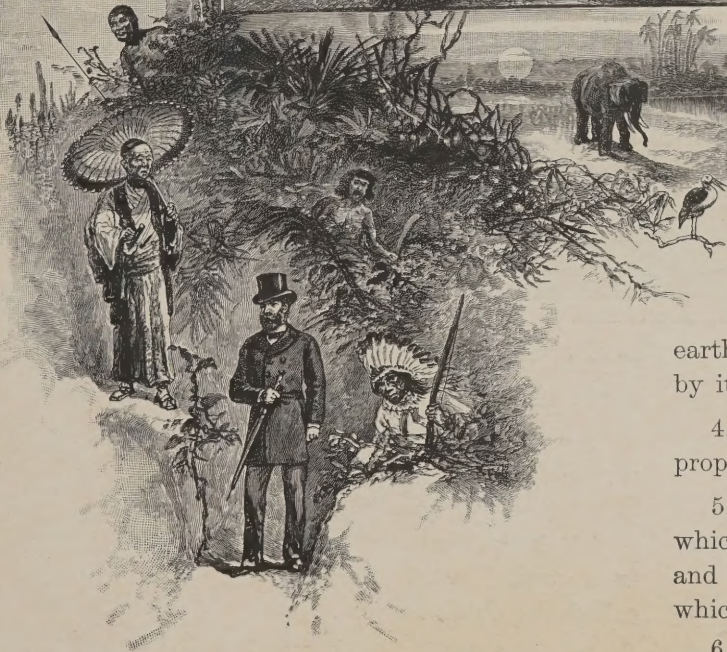
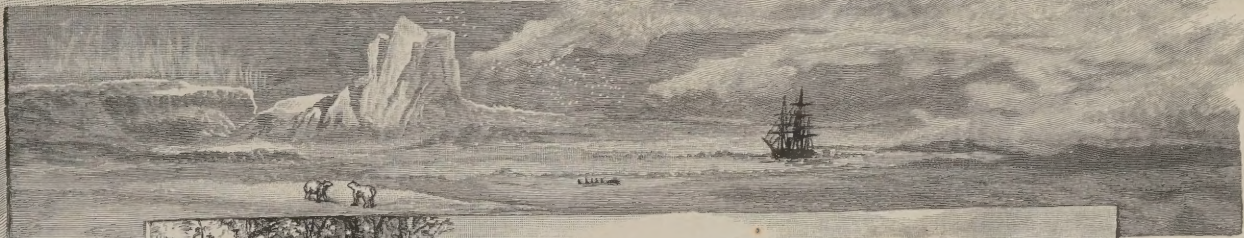
The orthography, *Bering*, is used in the Coast Survey, and other government publications. Commander IVAN IVANOVITCH BERING uniformly spelled his name *Bering*, as do his descendants, now living in Denmark. The erroneous form, *Ehring*, was first introduced in the second decade of the present century. Special students of Alaska steadily adhere to the correct form, *Bering*, and I take occasion to congratulate you on the attempt to spread the correct form before a large and increasing audience.

J. E. HILGARD,
Supt. U. S. Coast and Geodetic Survey.

Allegany is the orthography for the name of a county in New York; *Alleghany*, for the names of mountains and river; and *Allegheny*, for the name of a city in Pennsylvania.
Caucasus, *kə'ka sūs*.
Caucasian, *kə'kə'siən*.
Chicago, *shə'kə'gō*.
United States of Colombia, *kō'ləm'lə ū*.
Ir kootsk' and Ya kootsk' not *ou*.
Kadiak, *kā'di yāk'*, not *lō de āk'*, an island belonging to Alaska.

Kēm chāt'ka, not *tshat*.
Koo'ril, not *ku rīle*, island belonging to Japan.
La Paz, *lī pāth'*, capital of Bolivia.
Lad'o ga, not *lad o'ga*, a lake in Russia.
Los Ang'ēl ēs, not *an'je lē*, in California.
Mackinac, *māk'ē ng*, not *mak' in ak*.
Mad'rid, U. S.; Mad rid', capital of Spain.
Man i to bō', province in Canada.
Mendoza, *mēn dō' thū*.
Nōr'wich, Connecticut; nōr'īj, England.
Saghalin, *sā gā lēn'*, island east of Siberia.
Thāmes, Connecticut; tēmz, England.

BARNES' COMPLETE GEOGRAPHY



I. INTRODUCTION.

1. You all know that the world we live in, is called the earth,—that we walk, ride, and sail on the surface, or outside, of the earth,—that the streets, roads, fields, rivers, and lakes are parts of the earth's surface,—that birds fly above it, and fishes swim below it,—and that it is composed of land and water.

2. Whenever you learn from a teacher, a parent, a traveler, or a book, about the form of the earth, its

movements, its inhabitants, or any facts relating to its surface, you are learning *geography*.

3. **Geography**, therefore, is a description of the earth's surface, or of any thing which affects, or is affected by it.

4. **Land and water** compose the earth's surface in the proportion of one fourth land to three fourths water.

5. **On the land**, grow grass, plants, and trees, from which, either directly or indirectly, many kinds of animals and different races of people obtain their food, and without which no form of animal life could exist on the earth.

6. **Grass, plants, and trees** could not live without water. This is supplied in a very wonderful manner, from the water of the earth's surface.

7. **The sun's heat** evaporates a part of the water; that is, changes it into vapor, which rises in the air. The winds carry the vapor, or moisture, in the form of clouds, over the land. When this vapor enters air which is too cool, or unable to hold it, it is changed into drops and falls in the form of rain.

8. **Land and water, air and winds, heat and cold** are working together continually to make the earth fruitful and beautiful for the abode of mankind.

9. A description of all such natural, or physical, laws and objects is comprised in *Physical Geography*.¹

10. When you hear or read about different countries, states, and cities, with their boundaries and governments, such as republics, empires, and kingdoms, all of which have been established by men, you are learning what we call *Political Geography*.

11. Another division of the subject of geography relates to the shape and size of the earth—its motions, seasons, days, and nights. It also explains the uses of maps and globes, and of the lines and circles drawn upon them. This division is called *Mathematical Geography*.

12. When you look downward, you see the earth; but when you look upward, you see the sky and, perhaps, clouds floating in the air.

13. Beyond the clouds and the air, you look into a region so vast that the mind is unable to form any idea of its immensity.

14. The sun and stars are great bodies, which shine by their own light. The earth, moon, and other bodies, called *planets*, shine by light received from the sun.

1. *Physical Geography*.—What is a brook? What and where is its source, or origin? How came the water there? Whence come rain and snow?—clouds and vapors? How are they formed? How carried? By what converted into rain? What uses has rain? What is the difference between the source and the mouth of a river? What controls the course, or direction, of a river? How does a stream affect the land, or bed, on which it flows? What does a river do with the soil it carries, or washes, down? Where are mills usually built? Why?—Villages and cities? Why? Of what materials is the mill built?—the city? Were those materials obtained near by, or at a distance? How? By what means were some of the materials brought?

What, if any, useful minerals are obtained near where you live? What materials for making clothing?—food? Are any of these materials obtained or produced without labor? Which are affected by wind?—rain?—sun?—air? From what plants do we get materials for our clothing?—from what animals?—from what insect?

15. If you could go from the earth to the moon, the earth would appear to you there, as the moon appears to you here, only much larger.

16. If you could reach the sun and see the earth, this world would look to you like a small speck, or star, in the sky; and from whatever star you might visit, you would see still other stars far beyond you and in every direction.

17. This vast, boundless region, or space, is called the *heavens*; and the bodies we have mentioned, are called *heavenly bodies*.²

18. The heavenly bodies are all in motion. The sun has several

planets revolving around it, one of which is our world. Some of these planets are larger, and some are smaller, than the earth. Besides, some of these planets have other and smaller bodies revolving around them; these are called *moons*. The earth has one moon.

19. This group of planets with their moons and the sun, around which they are all constantly revolving, is called the *Solar System*.

20. The earth is a heavenly body which is constantly whirling around the sun, in a path, called its *orbit*.



THE EARTH IN SPACE.

What animals are raised in your neighborhood? Mention their uses. Mention the principal fruits which grow in your neighborhood,—vegetables,—grains,—trees,—their several uses,—methods of preparing them for use. Mention the metals,—other minerals,—animal products.

How are feathers obtained?—furs?—silks?—oysters? How is leather made ready for use?—lumber? What is butter?—cheese?—lard?—cream?—beef?—pork?—venison?—poultry?—sugar?—molasses?—tea?—coffee?

2. *Heavenly bodies* resemble one another in their shapes, which are spherical, or globular. They differ greatly in size and in physical conditions. Some of them are yet hot, seething masses; others have a solid crust surrounding a heated interior; while others, still, having parted with their heat, are cold and solid from surface to center. It is believed that each of these bodies is surrounded by an atmosphere, and that at least on one (Mars), besides the earth, the land and water are separated from each other.



ROTUNDITY OF THE EARTH.—ATLANTIC OCEAN FROM NORTH AMERICA TO IRELAND, IRISH SEA, ENGLAND, AND NORTH SEA.

II. THE EARTH,—ITS FORM AND SIZE.

1. A **sphere** is a body bounded by a curved surface, every part of which is equally distant from a point within, called the center. Half a sphere is a *hemisphere*.

2. The **diameter** of a sphere is a straight line which extends through the center of the sphere, and terminates at the surface.

3. The **axis** of a sphere is the diameter on which the sphere spins, or *ro'tates*.

4. The **poles** are the ends of this axis.

5. An **oblate* spheroid*** is a spherical body flattened at the poles. The axis of an oblate spheroid is its shortest diameter.

6. The **earth** is an oblate spheroid. It differs but slightly, however, from a true sphere.¹

7. That the earth is spherical (*sph'rik*) in shape, is proved in several ways:—

First. Vessels have sailed around it.

1. The **shape of the earth** is such as a sphere or ball composed of wet clay, or other plastic* material, would assume, if spun upon an axis. The velocity of rotation would cause the sphere to bulge at the Equator, and to shorten the axis. If this velocity should be increased, portions of the sphere would be thrown off. Many eminent scholars believe that the planets were once a part of the sun, and were fragments of it, hurled off into space.

2. The **apparent ho ri'zon** is best observed on the sea, or on a level plain. The **true horizon** is an imaginary one used by astronomers. It is always parallel with the apparent horizon. Its plane divides the earth into two equal parts. A man standing on a level plain, or at the surface of the sea, is able to see the surface of the earth for about three miles in every direction. The circle around

Second. The shadow of the earth when it falls on the moon is always circular.*

Third. When a perfectly level line is surveyed across a lake, or other body of water, it is found that the surface of the earth curves away from the line.

Fourth. At the distance of one mile from the point where this line touches the earth, the curvature is about eight inches; at three miles, it is six feet; and at five miles, it is about sixteen feet.

Fifth. When a vessel approaches an observer, the tops of the masts are first seen; then, the sails and rigging;* and, finally, the hull of the vessel.

8. The **ho ri'zon** is the limit beyond which we can not see objects on the earth's surface. These objects are shut out because of the earth's roundness. This circle which thus limits our view is called the **apparent* horizon**.²

9. The **equatorial** (*ē qua to'ri al*) **diameter** of the earth is nearly 8,000 miles. The axial, or polar diameter, is about twenty-six miles shorter than the equatorial.³

10. The **circumference** of the earth, at the Equator, is about 25,000 miles.

him, and distant from him, three miles, is his horizon. His horizon would be enlarged according to his height above the sea-level. The horizon of a sailor at the mast-head is greater than that seen from the deck of a vessel. Who would see the sun rise first, a man at the top of a high mountain, or one at its foot? Which sees the sun set first? Which has the longer day?

3. The **diameter of the earth**, measured from the Tropic of Cancer to the Tropic of Capricorn, may slightly exceed the equatorial diameter. The equatorial diameter is 7925.6; the axis, 7899.1.

* *Ob late'*, flattened at the poles.

sph'roid, a body, nearly like a sphere.

circu lar, round like a circle.

rig'ging, ropes which support the masts.

ap p'ar ent, visible.

plas tic, capable of being molded.

III. MOTIONS OF THE EARTH.

11. The motions of the earth are two,—a *daily* and a *yearly*.

12. The **daily motion** is the rotation of the earth on its axis. The time in which it makes a complete rotation is divided into twenty-four parts, called hours.

13. The **succession*** of day and night is caused by the rotation of the earth on its axis.

14. The earth turns on its axis from west to east; but to an observer on the earth, the sun appears to move around the earth from east to west, daily.

15. The sun shines on one half of the earth at a time, while the other half is in darkness. In the illuminated* half, it is said to be day; in the dark half, night.

16. As the earth turns on its axis, it constantly brings a succession of places to the light, and then carries them into the shadow.

17. The time at which the sun first appears every morning on the horizon, is called *sunrise*; the time at which it disappears below the horizon, *sunset*. It is evident,* therefore, that an observer east of a given place will see the sun at sunrise before an observer west of that place. For instance, it is sunrise three hours sooner at Boston than at San Francisco.⁴

18. The **yearly** motion of the earth is its journey around the sun. While the earth makes a complete journey, or revolution, around the sun, it turns on its axis 365½ times. The time in which this revolution is made, is called a *year*.

19. The **path** of the earth in its journey around the sun, is called its *orbit*. In shape, the orbit of the earth is an *ellipse*.⁵

IV. DIRECTIONS, POSITIONS, MEASUREMENTS.

20. The direction in which the sun appears on the horizon in summer is east, or nearly so; at its setting, it is west, or nearly so. With the right hand toward the east and the left hand toward the west, the face of the observer is toward the *north*; his back, toward the *south*.

4. When the sun is on the horizon, or just rising, in California, Oregon, and Washington Territory, it is one hour high, or above the horizon, in Colorado; two hours high, in Wisconsin, Illinois, and Mississippi; and three hours high, in New York and New Jersey. When the boys and girls on the Pacific Coast of the United States are entering school at nine o'clock in the morning, those on the North Atlantic Coast are beginning to eat their dinners, or luncheons,* at twelve o'clock, noon. You will learn more about this subject, in another lesson.

5. The sun is not in the center of the ellipse, but near it. Hence, the distance of the earth from the sun differs at different times. The earth is about 3,000,000 miles nearer the sun in December, than in June.

1. These directions are determined at sea by means of an instrument called the mariner's* compass. This instrument consists of a magnetized bar of steel attached to a circular card on which the names of the cardinal points are printed. The needle and card are balanced on a pivot, and inclosed in a metallic box with a glass top. No matter which way the magnetized bar is turned, it always swings

21. These directions are called *cardinal* points*; a direction midway between north and east is *north-east*; between north and west, *north-west*; between south and east, *south-east*; and between south and west, *south-west*.¹

22. Shadows, at noon, in the United States, fall toward the north.²

23. The positions of places on the earth and their distances from one another, are determined by means of lines supposed to be drawn upon its surface.³

24. A circle is a figure bounded by a curved line, every part of which is equally distant from the center.⁴

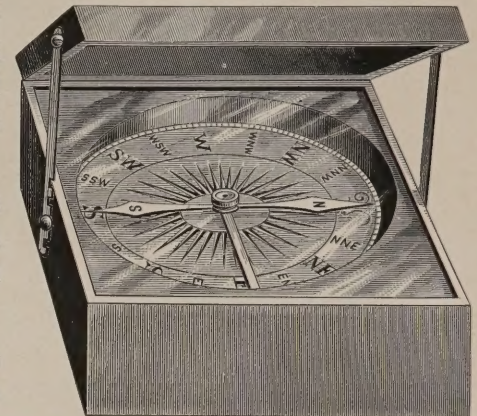
25. The **great circles** of the earth are those which divide it into two equal parts, called *hemispheres*. **Small circles** are those which divide it into two unequal parts.

26. The **Equator** is a great circle midway between the North Pole and the South Pole. The Equator divides the earth into the Northern Hemisphere and the Southern Hemisphere.

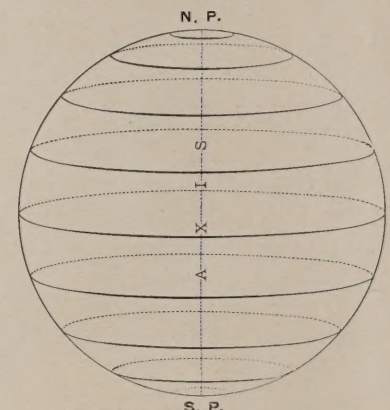
27. **Parallels** are small circles parallel to the Equator.

28. **Meridian circles** are great circles that pass through the poles of the earth. Each meridian circle crosses the parallels at right angles.

29. A **meridian** is one half of a meridian circle. Meridians extend from pole to pole.



MARINER'S COMPASS.



EQUATOR AND PARALLELS OF LATITUDE.

back and comes to rest in a direction nearly north and south. (See *New Physical Geography*, p. 40.)

2. The **cardinal points** of the compass may be marked on the class-room floor.

3. On maps, or representations of the earth's surface, the lines are *real*, not imaginary; on the earth, each line is the circumference of a circle, or a part of it.

4. Every circle (or circumference) may be divided into 360 equal parts, called *degrees*, marked ($^{\circ}$). Each degree may be divided into 60 *minutes*, marked ($'$). Each minute may be divided into 60 *seconds*, and marked ($''$). For instance, the expression $3^{\circ} 20' 28''$ is read,—3 degrees, 20 minutes, and 28 seconds. To distinguish these from minutes and seconds of *time*, the phrase of *arc* is employed. Thus, $30'$ is read,—30 minutes of arc. An arc is part of a circumference. There are 180° in one half of a circumference; 90° , in one fourth; and 45° , in one eighth.

* *suc cès' sion*, following in order.

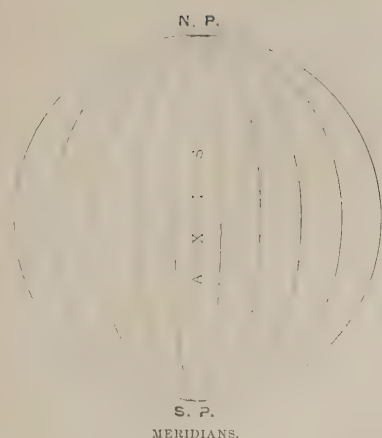
* *lunch' eon* (lunch'un), a light meal at noon.

* *lū' mī nāt ed*, light thrown on it.

* *cār' dī nāl*, principal.

* *ev' i dent*, clear to the understanding.

* *mar' i ner*, a seaman, or sailor.



30. The position of a place on the earth's surface is given in terms of *latitude* and *longitude*.

31. **Latitude** is distance north or south of the Equator, expressed in degrees, minutes, and seconds. Places north of the Equator are said to be in north latitude; those south of the Equator, in south latitude.

32. *Latitude* is reckoned from the Equator toward the poles. A place on the Equator is in lat. 0° ; the latitude of the North Pole is 90° N.; of the South Pole, 90° S.

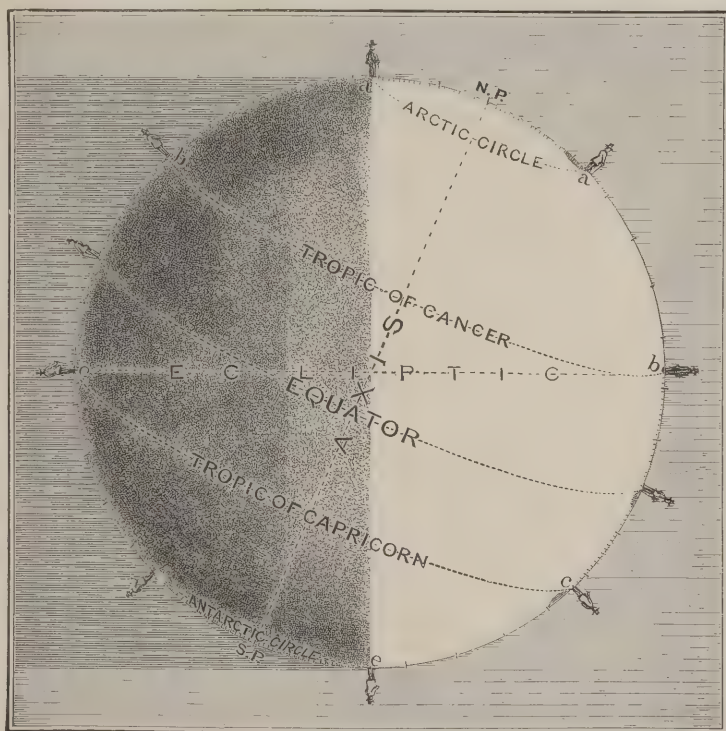


Diagram 1.—Summer in the Northern Hemisphere, and winter in the Southern.

DIAGRAMS SHOWING DAY AND NIGHT,—POSITIONS OF CIRCLES,—VERTICAL SUN,—ANTIPODES,—TWILIGHT,—SHADOWS AT NOON,—THE EARTH'S SURFACE DIVIDED INTO 360 DEGREES.

33. *Degrees of latitude* are shown by the figures at the sides of the maps. A degree of latitude is 69.2 miles, in length.

34. **Longitude** is distance east or west from a given meridian, expressed in degrees ($^{\circ}$), minutes ($'$), and seconds ($''$). This given meridian is called a *prime meridian*.

35. The *prime meridian*, adopted by nearly every nation, is the meridian passing through Greenwich (grēn'ij), near London, England.

36. *Longitude* is reckoned from 0° , the longitude of the Greenwich prime meridian, to 180° , or half-way

around the earth. Places east of this meridian are in east longitude; those west of it, in west longitude.

37. The figures at the top of the maps in this book indicate longitude reckoned from Greenwich. On maps of the hemispheres, the degrees of longitude are usually shown on the Equator.⁵

38. Certain circles used in geography, mark the position of the sun's rays, at certain times. They are called *astronomical circles*.

39. The axis of the earth is not perpendicular to the plane of its orbit, but is inclined $23\frac{1}{2}$ degrees from the perpendicular.* Therefore, when the North Pole leans toward the sun, as shown in diagram 1, the rays of the sun will illuminate the earth $23\frac{1}{2}$ degrees beyond the North Pole.⁶

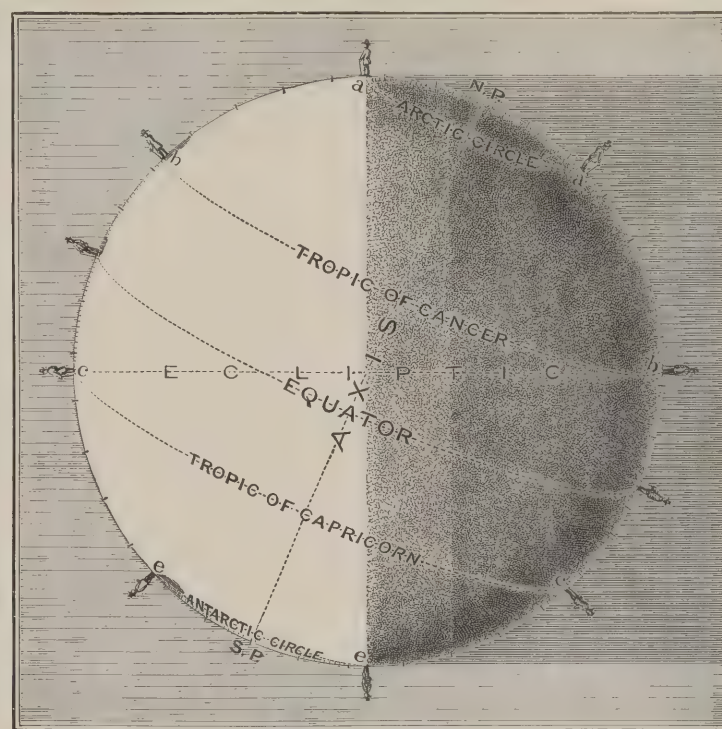


Diagram 2.—Winter in the Northern Hemisphere, and summer in the Southern.

40. This limit of the sun's light marks, at *a, a*, the position of the Arctic Circle, called, also, the North Polar Circle.

41. The rays of the sun are then vertical,* at noon, on the earth's surface at *b*, which is $23\frac{1}{2}$ degrees north of the Equator. This point shows the northern limit of places which may have a vertical sun, at noon, and marks the Tropic of Cancer.

42. When, however, the earth has moved half-way around in its orbit, and the North Pole leans from the sun, as shown in diagram 2, the sun's rays extend $23\frac{1}{2}$ degrees beyond the South Pole, thus marking, at *e, e*, the position of the Antarctic, or South Polar Circle.

5. The length of a degree of longitude varies with the size of the parallels of latitude, from 0 at the poles, to 69.2 miles at the Equator. The maps show the length of a degree of longitude, on different parallels.

6. The plane of the earth's orbit may be considered an imaginary surface on which the earth's orbit is drawn.

* *per pen dic' u lar*, exactly upright. *ver' tic al*, directly overhead, or in the *ze' nith*.

43. The sun's rays are then vertical, at noon, at *c*, a point $23\frac{1}{2}$ degrees south of the Equator; this point shows the southern limit of places which may have a vertical sun, at noon, and marks the Tropic of Capricorn.

44. All places on the earth which are situated at the Tropic of Cancer have a vertical sun, at noon, once every year—June 21.

All places at the Tropic of Capricorn have a vertical sun, at noon, once every year—about the 21st of December. All places between these tropics have a vertical sun, at noon, twice every year.⁷

45. **Change of seasons.**—The axis of the earth preserves a fixed, unvarying direction, or nearly so, as the earth journeys around the sun. Because of this, it is evident that a given locality* will receive the rays of the sun more directly at one part of the year than at another, thereby causing successive changes of seasons.

46. **Zones.**—Zones are belts into which the surface of the earth is divided by astronomical circles. They are parallel to the Equator.

47. *The Torrid, or hot, Zone* is situated between the Tropic of Cancer and the Tropic of Capricorn. It extends

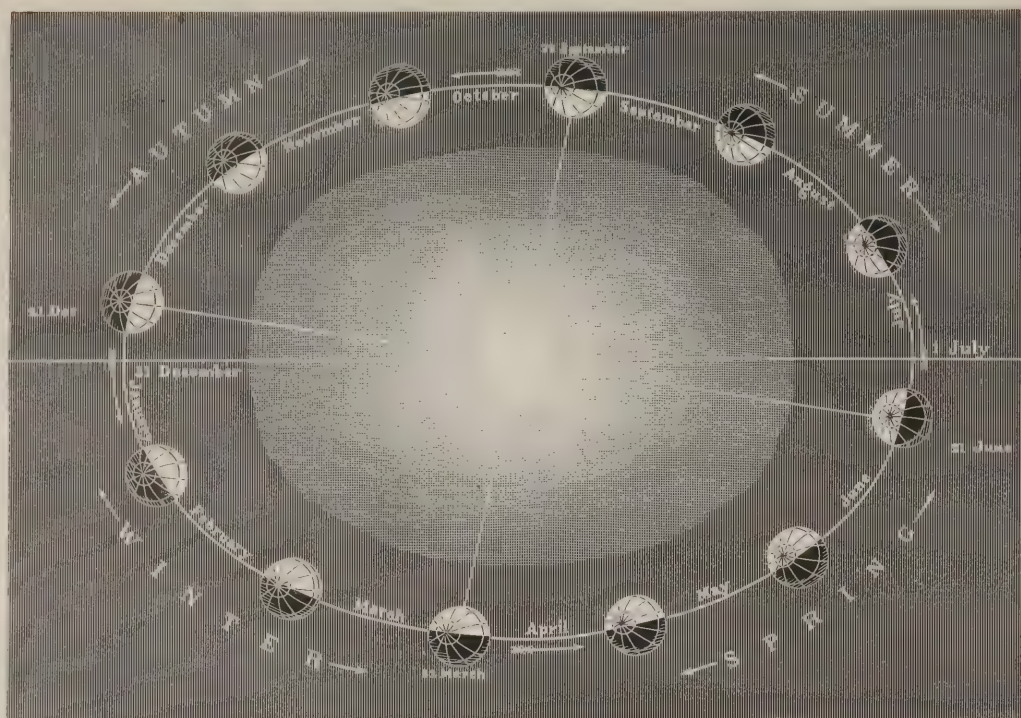
7. To an observer at the Equator, the sun is vertical, or directly overhead, at noon, on the 22d of March; but on succeeding days, at noon, it appears to have moved a little northward. By the 21st of June, at noon, it is $23\frac{1}{2}$ degrees north of a point directly overhead. The sun goes no farther north, however, but *turns* and appears to move southward, so that on the 22d of September it is again overhead, at noon; and on the 21st of December, $23\frac{1}{2}$ degrees south of a point overhead, after which, it again turns northward.

The point at which the sun apparently *turns back* in its course, is called the **tropic** (from a Greek word, meaning to turn). The northern tropic is called Tropic of Cancer, because the sun appears to be in a group of stars, called Cancer; the southern tropic is named also from a constellation,* known as Capricorn.

To an observer at the North Pole, on the 22d of March, the sun appears to travel around the horizon. Day by day, it mounts a little higher, until, on the 21st of June, it is $23\frac{1}{2}$ degrees above the horizon, each day sweeping in a circle around the sky. Then it gradually sinks lower and lower during succeeding days, until, on the 22d of September, it again skims the horizon, and soon sinks below it, and thus disappears for six months. By the 21st of December, it is $23\frac{1}{2}$ degrees below the horizon. It then turns, and, on the 22d of March, the observer again sees the sun. It is evident, therefore, that the days and nights at the poles are each of six months duration.

The great circle on the earth where the sun is vertical at noon, every day in the year, is that which coincides with, or falls within, the earth's orbit. It is called the **Ecliptic**.

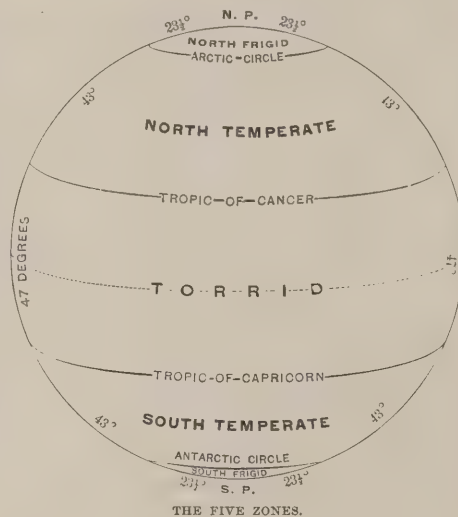
8. The width of the temperate zones may be easily calculated. From either pole



$23\frac{1}{2}$ degrees on each side of the Equator; its width is 47 degrees.

48. *The Temperate Zones* lie between the tropics and the polar circles. The North Temperate Zone is north of the Tropic of Cancer; the South Temperate Zone, south of the Tropic of Capricorn. Each temperate zone is 43 degrees in width.⁸

49. *The Frigid, or cold, Zones* are situated within the polar circles. They are not belts, like the other zones, but circular portions of the earth's surface. Each has a pole for its center, and a polar circle for its circumference, or boundary. Each extends $23\frac{1}{2}$ degrees from the pole which it surrounds; consequently, the diameter of each is 47 degrees.



to the Equator, the distance is 90 degrees. From either pole to its polar circle, the distance is $23\frac{1}{2}$ degrees; and from the Equator to either tropic, $23\frac{1}{2}$ degrees. Therefore, 90° less twice $23\frac{1}{2}^\circ$, or 47° , equals 43° , the width of either temperate zone.

Blackboard Exercises on these points may here be made very interesting and impressive. Draw a circle one or two feet in diameter and divide it into 360 equal parts, called degrees, as shown on diagrams 1 and 2 (p. 9). Opposite one side, draw straight, parallel lines to represent rays of light proceeding from the sun. Then draw, or mark, in the following order,—a line separating day from night, which is always perpendicular to the plane of the earth's orbit. Mark a point $23\frac{1}{2}^\circ$ from the top of this line, and in the direction of the sun; from this point, draw a straight line through the center of the circle to the opposite side. This line will represent the axis of the earth, and the two points where it touches, or terminates at, the surface, will represent the North Pole and the South Pole. Draw the Equator, at right angles with the axis. The rays of light extending precisely $23\frac{1}{2}^\circ$ beyond the North Pole fixes the position of the Arctic Circle, and as they, at the same time, fall that distance short of the South Pole, they mark the position of the Antarctic Circle.

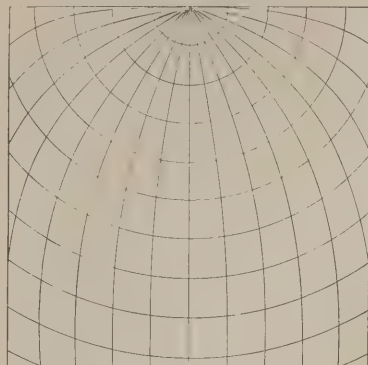
If the earth's axis were perpendicular to the plane of its orbit, the limit of the sun's rays, on the earth's surface, would always be on a meridian. In that case, there would be no tropics or polar circles.

Diagrams may be drawn on the blackboard showing the position of the earth, and the circles, and zones, if the axis were inclined 10° , 30° , or 40° , instead of $23\frac{1}{2}^\circ$.

* *con stel la'tion*, a group, or cluster, of stars. *lo cal' i ty*, position, or place.

V. GLOBES AND MAPS.

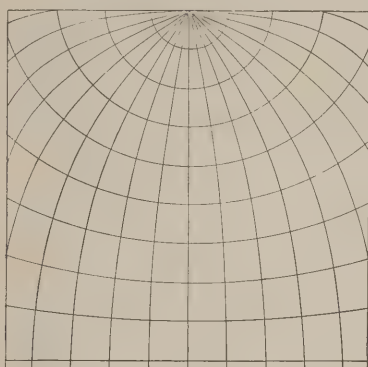
50. A **geographical globe** is a sphere on which is drawn a representation of the earth's surface.



THE CONIC PROJECTION.

above, or its depression below, the sea-level.

54. A **projection** is the plan by which the meridians and parallels are drawn upon a flat surface.⁹



THE POLYCONIC PROJECTION.

57. **Up** is from the center of the earth; **down**,* toward it.

58. The **positions** of places on a map, with respect to one another and to the points of the compass, will be made plain, when the map is on a table, or horizontal, with the meridians extending north and south.

59. The **scale** of a map shows the ratio* of distances on the map, to the real distances on the earth. Thus, the scale, 1 : 30,000,000, means that one inch on the map represents 30,000,000 inches, or about 500 miles on the surface of the earth. (*For a map on Mercator's projection, see p. 15.*)

9. The **projections** usually employed are the **cōn'ic**, **pol y cōn'ic**, and **Mer cā'tor's**. In the *conic*, or *Bonne's*, projection, both meridians and parallels are curved, the parallels being drawn around the same center. In the *polyconic* projection, the Equator is a straight line; but the parallels are arcs of circles drawn from different centers. The meridians are also curved. In *Mercator's* (named after a German geographer who first employed it) projection, both parallels and meridians are straight lines. Maps drawn on the conic projection are distorted at the margin, but the proportional areas are preserved. Most of the maps in this book are drawn on the conic projection. The polyconic is the most accurate projection for maps of small areas. Near the margins, however, direction is somewhat distorted. Mercator's projection is usually employed when it is desired to show the *whole* of the earth's surface on a continuous map. The size of polar regions is greatly exaggerated* in maps drawn on this projection, but the directions are preserved.

10. Each of the **grand divisions**, or **continents**, has, more or less, the shape of a triangle,—broad at the north and tapering to a point at the south. Europe has one mile of coast for every 190 square miles of area, while Africa has but one mile of coast for every 500 miles of area. Indentations of coast temper the climate of a country and, by creating good harbors, aid its commercial prosperity.

11. **Reefs** are long, narrow islands parallel to a coast. **Keys** are ledges of rocks

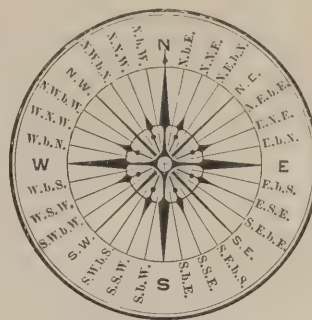
51. A **map** is a representation on a flat surface of a part of the earth's curved surface.

52. A **relief map** shows the outlines of a continent, or other body of land, with its elevations and depressions.

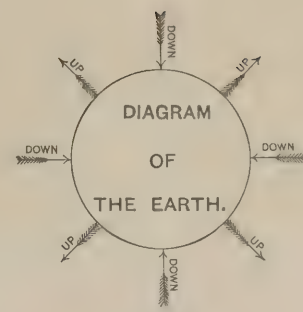
53. A **profile**,* or **sectional map**, is designed to show the elevation of land above, or its depression below, the sea-level.

55. **North** is in the direction of the top of a map; and **south** is toward the bottom of a map, always along the meridians.

56. **East** is toward the right side; and **west**, toward the left side of a map, always along the parallels.



DIRECTIONS.—NORTH,—EAST, ETC.



UP,—DOWN.

VI. THE LAND.

1. The earth's surface contains about 197,000,000 square miles.

2. Of this area, a little more than one fourth (53,000,000 square miles) is land, and three fourths (144,000,000 square miles) is water.

3. Most of the land is situated in the Northern Hemisphere.

4. According to **form**, the land surface consists of continents, islands, penin'sulas, capes, and isth'muses.

5. According to **elevation**, it is subdivided into mountains, plateaus (plā tōz'), or table-lands, plains, and valleys.

6. A **continent** is the largest natural division of land.

7. There are three continents, namely: the Eastern, the Western, and the Australian Continent. Each grand division of land is also called a continent.¹⁰

8. An **island** is a body of land surrounded by water.

9. A **group of islands** is often called an archipelago (ār kī pēl'a go).¹¹

10. A **peninsula** is a body of land nearly surrounded by water.¹²

11. A **cape** is a point of land extending into the water.¹³

12. An **isthmus** is a neck, or narrow strip, of land which connects two large bodies of land.

13. A **coast** is that part of the land which borders on a large body of water.

near the surface of the water, or islands rising a little above the surface of the water. **Spits** are islands covered with water at high tide.

The **chains of islands** which are near and parallel to the coasts of continents, are partly submerged* mountain ranges. The Japan, Koo'ril, and Philippine (*fil'ip-pin*) islands form such a range; the Aleutian Islands are an extension of the Rocky Mountain System. Between the islands and the coast of the continent, the waters are shallow; but on the seaward side of the chain, the bed of the ocean slopes abruptly to a great depth.

Cōr'al islands are limestone reefs, formed from the skeletons of the coral polyps. The coral island is usually an irregular ring of land broken in several places. Sometimes there is a volcanic mountain in the center of the island, but oftener, a shallow lake. This ring-shaped island is called an *a tōll'*; the lake, a *la goon'*.

12. A **peninsula** projects from, or is connected with, a larger body of land, called the main-land.

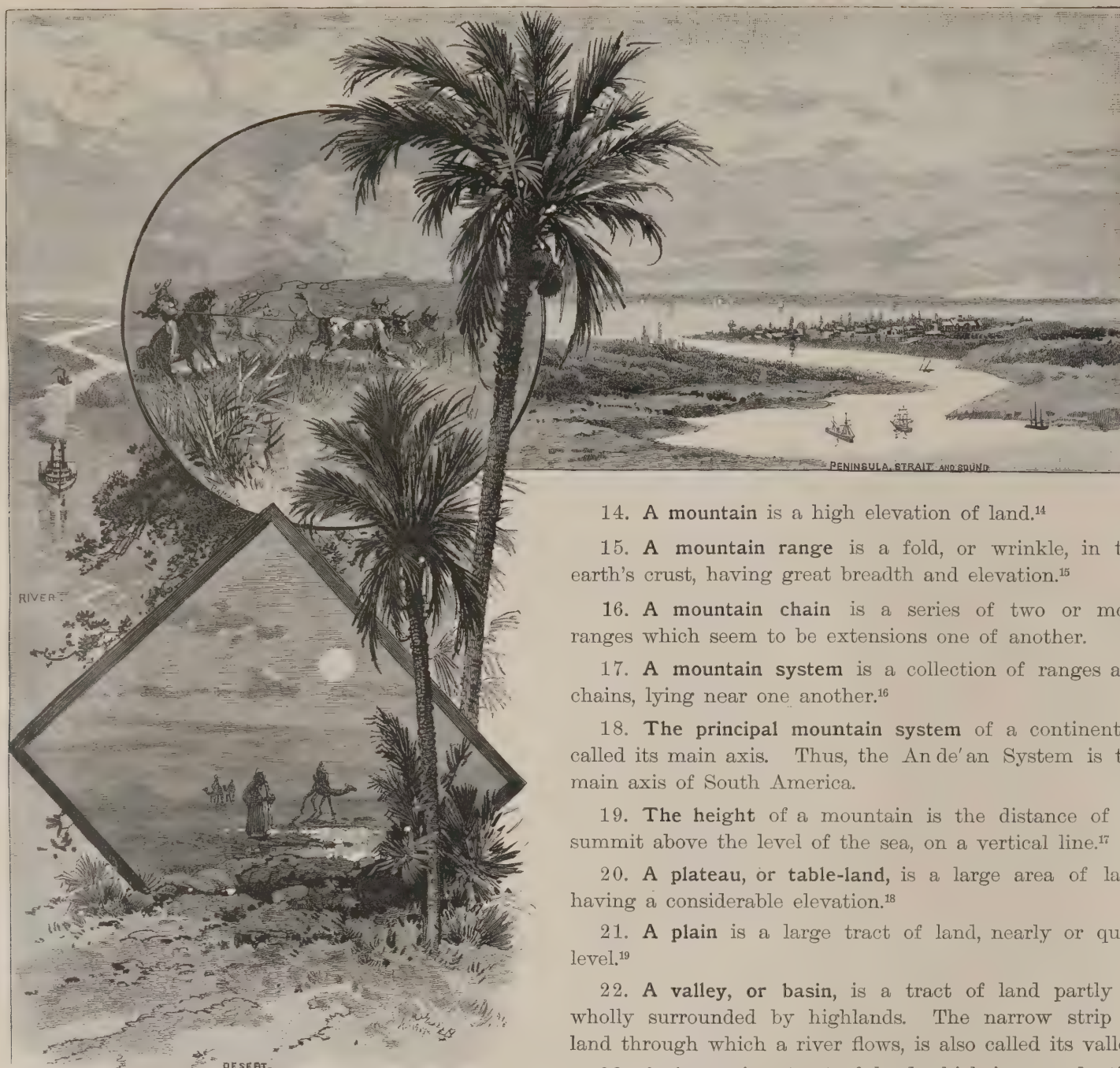
13. **Headlands** and **promontories** are high capes. Other names for capes are *point*, *head*, *naze* (nose); *horn*, *mull*, and *bill* are sometimes employed.

* *pro'file* (pro'fil, or pro'feel), outline.

* *up*, ascending; *down*, descending.

ex āg'jer āte, to make appear greater than reality. *sub merged'*, under the water.

ratio (rā'shō), the relation which one quantity bears to another of the same kind.



A DESERT,—AN OASIS,—A RIVER,—A STRAIT,—A PENINSULA,—A CAPE,—
A SEA-PORT TOWN,—PAMPAS, OR GRASSY PLAINS,—COCOA-NUT-PALMS.

14. A **peak** is the top of a hill, or a single mountain ending in a point. A **butte** (*būt*) is a name given to an isolated peak in the western part of North America. In Scotland, the word **ben** signifies mountain. A **hill** is an elevation of land, not so high as a mountain.

15. If the summit of the mountain range be irregular and notched in appearance, the name **sierra** (*shēr' rā*) (a Spanish word meaning *saw*) is prefixed* to the name of the range; as, *Sierra Nevada Mts.*

16. Thus, the numerous ranges and chains of the western highlands of North America form the Rocky Mountain System; those along the eastern coast of the United States, the Appalachian (*āp pa lā' chē an*) System.

The principal mountain system of a continent extends in the direction of its greatest length.

The ranges which compose a mountain system are usually parallel to one another. Often, the parallel ranges are connected by short, cross ranges, or "spurs," thus inclosing basins, or "parks." Mountains affect the climate of a country. Their snow-clad summits act as condensers, cooling the air, and sending down the moisture from the clouds; and, thereby, insuring an abundance of rain to a country that would otherwise be dry and barren.

17. The height of a mountain may be found either by ascertaining the temperature of water when it boils on the summit of the mountain, or by observing the

14. A mountain is a high elevation of land.¹⁴

15. A mountain range is a fold, or wrinkle, in the earth's crust, having great breadth and elevation.¹⁵

16. A mountain chain is a series of two or more ranges which seem to be extensions one of another.

17. A mountain system is a collection of ranges and chains, lying near one another.¹⁶

18. The principal mountain system of a continent is called its main axis. Thus, the Ande'an System is the main axis of South America.

19. The height of a mountain is the distance of its summit above the level of the sea, on a vertical line.¹⁷

20. A plateau, or table-land, is a large area of land having a considerable elevation.¹⁸

21. A plain is a large tract of land, nearly or quite level.¹⁹

22. A valley, or basin, is a tract of land partly or wholly surrounded by highlands. The narrow strip of land through which a river flows, is also called its valley.

23. A desert is a tract of land which is unproductive for want of sufficient moisture.²⁰

height of the mercury in a barometer.* In the former case, the boiling point of water, which is 212° F. at the level of the sea, is one degree less for about every 533 feet of ascent. By the latter method, the mercury in the barometer lowers a tenth of an inch for about every ninety feet of ascent above the sea-level.

The base, or foot, of a mountain is its lowest part; the summit is the highest part; the crest of a range is the ridge from which the two slopes descend; the trend of a range is its general direction. A pass is a break, opening, or narrow road, or way, crossing a mountain chain.

18. A mes'a is an elevated table-land lying against the side of a mountain. Plateaus are not always level highlands; they are usually rugged and mountainous.

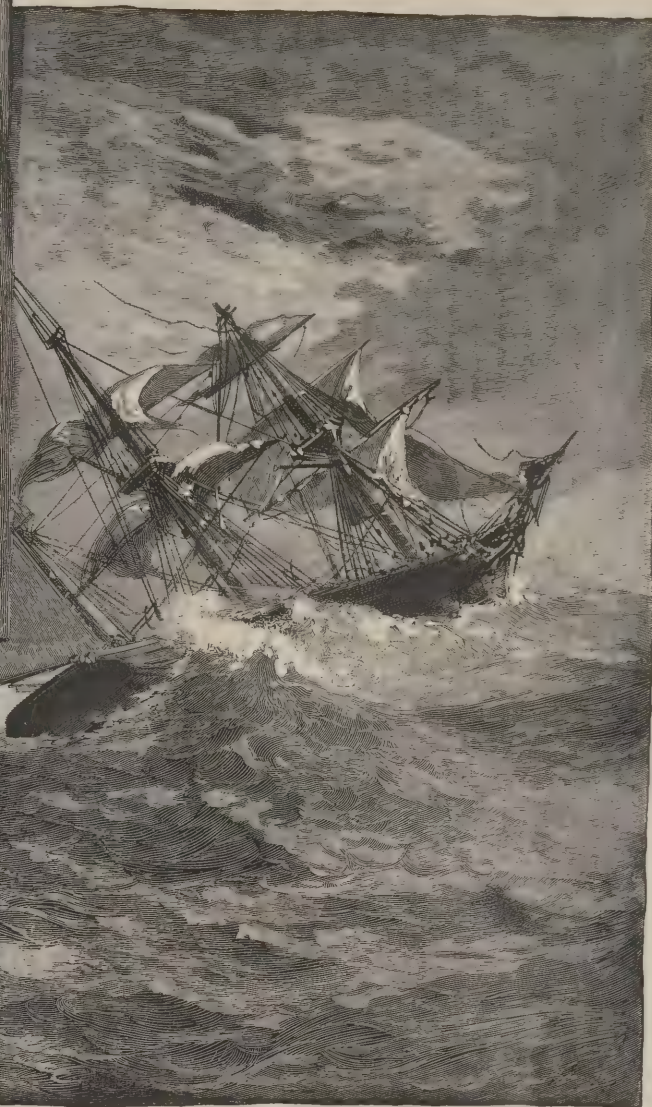
19. The plains of the Mississippi Valley are called prairies; those of South America, llanos (*lā' nōs*), pām' pas, and sel' vas; of Russia and Siberia, steppes (*steps*). The marshy, mossy plains of Northern Siberia, bordering the Arctic Ocean, are called tūn' drās. Prairies, pampas, llanos, and steppes are generally treeless plains. They have a great depth of soil, and are often extremely fertile. Such plains, before they are cultivated, are nearly always covered with wild grasses.

20. Deserts are generally level, but sometimes their surface is hilly, or mountainous. Their soil is usually sandy.

* *ba rōm' e ter*, an instrument for showing the weight or pressure of the atmosphere, and the changes of weather. * *pre fixed'*, put before.



THE OCEAN OR SEA,—A CALM.



A STORM.

24. An o'a sis is a fertile spot in a desert.²¹

25. A volcano is an opening in the earth's crust, through which lava, or molten * rock, steam, and various gases are forced.²²

26. The crater of a volcano is the cup-shaped depression, or hollow, at its top.²³

27. The cause of volcanic eruptions is usually considered to be the sudden formation of steam from the water that finds its way to heated portions of the earth's interior.²⁴

28. Earthquakes are tremblings, or vibrations, of a part

of the earth's crust. They are sometimes due to volcanic action, being most frequent in volcanic regions and along the more recently formed mountain ranges.²⁵

VII. THE OCEAN OR SEA, AND ITS DIVISIONS.

1. The waters of the earth form an irregular but continuous body, called the ocean, or sea.

2. Ocean waters are comprised in five grand divisions, each of which is called an ocean. These divisions are the Pacific, Atlantic, Indian, Antarctic, and Arctic oceans.

An extinct volcano is one from which all signs of volcanic activity have disappeared. Nearly every coral island of Polynesia marks the site of a sunken, volcanic mountain. There are now more than 1,000 volcanoes having well defined craters. Of this number, 350 are active.

25. Such earthquakes are probably due to the same forces that cause volcanic eruptions. Earthquakes are, in many instances, caused by gradual shrinkage of the earth, in cooling. Sometimes they are caused by pressure of the air, or the water.

Gradual changes of level in the earth's crust may take place without perceptible violence. The eastern coast of Greenland is sinking; the northern parts of Norway and Sweden are rising; the southern part of Florida is sinking; so is the bed of the ocean in the region of Oceania (ō she ō' nī a).

* molt' en, melted.

e mit', to send out.

cōn' i cal, like a cone.

21. An oasis is generally underlaid by a basin-shaped stratum of clay, or of limestone. This holds the water that finds its way from surrounding highlands.

22. The solid substances ejected, collect about the volcanic opening and build up a conical* mountain. Most of the volcanoes of the earth are situated in mountain ranges, and are near the sea-coast. A chain of volcanoes extends along the entire coast that partly incloses the Pacific Ocean.

23. Volcanic craters vary from a few rods to several miles, in diameter.

24. A few volcanoes are constantly active, that is, emitting* steam and lava. Their eruptions, however, are not marked by great violence. Stromboli (strōm' bō lē), in the Mediterranean Sea, is a volcano of this class.

Others remain inactive for centuries, and then burst into most violent activity. Ve su' vi us, near the city of Naples, in Italy, is a type of this class.

3. **The Pacific Ocean** has an area nearly equal to that of all the other oceans. It is partly inclosed by the Eastern Continent on the west, and the Western Continent on the east.

4. **The Atlantic Ocean** is between the Eastern Continent on the east, and the Western Continent on the west.

5. **The Indian Ocean** is partly inclosed by Africa, Asia, and Australia.

6. **The Antarctic Ocean** surrounds the South Pole, and the **Arctic Ocean** surrounds the North Pole. Much of their surface is covered with ice throughout the year.

7. **The arms and passages** of the ocean are called seas, gulfs, bays, straits, channels, and sounds.

8. **A sea** is a body of water nearly or quite surrounded by land.

9. **A gulf, or bay**, is a body of water extending into the land.²⁶

10. **A strait, or channel**, is a narrow passage of water connecting two larger portions of water.²⁷

11. **A sound** is a shallow channel, or bay.²⁸

12. **The bed of the ocean**, although diversified* by plateaus and plains, is more nearly level than the surface of the land.²⁹

13. **The color** of the ocean varies. Shallow waters are green, while water more than sixty fathoms* deep is blue. Fresher waters are usually of a pale green, while those containing a larger percentage of mineral salts are blue.³⁰

14. **The temperature** of the ocean, at the surface, varies according to latitude. In equatorial regions, it is about 80° F.; in polar regions, about 28° F.³¹

VIII. WAVES, TIDES, AND CURRENTS.

1. **Waves** are the alter'nate rising and falling of swells, or ridges, of water. They are caused by the wind. The wave itself moves forward, but the water does not; its only motion is its alternat rise and fall.³²

26. **A bight** is an open bay; a **firth, frith, fiord** (*fjörð*), or **inlet**, is a small bay usually having steep shores. A **roadstead** is an open place where vessels may anchor at some distance from the shore. A **harbor, or haven**, is a small, sheltered inlet where vessels may anchor.

27. **Minch and belt** are also used to designate narrow passages of water.

28. **Shoals and banks** are shallow parts of the sea.

29. **The average depth** of the Pacific, Atlantic, and Indian oceans is about 16,000 feet. The depth of the Antarctic is probably somewhat less. The Arctic Ocean and all land-locked arms of the sea are much shallower.

The deepest soundings attained are off the eastern coasts of the continents. East of the Kooril Islands, a sounding of 27,930 feet, and south-east of Newfoundland, one of 27,480 feet, have been made. The Gulf of Mexico and the Mediterranean Sea do not exceed 12,000 feet in their deepest parts. The Red Sea is about 3,000 feet deep; the Baltic and North seas, about 600 feet; and Be'ring Sea, about 200 feet deep.

30. **Ocean currents** contain an average of 3¼ per cent. of mineral salts, of which common salt is the principal. These salts are derived from the earth, and much of them has been conveyed to the ocean, by rivers. The proportion of salt varies. In parts of the Arctic Ocean, it is sometimes less than one per cent.; in the Baltic Sea, about two per cent.; in the Red Sea, however, where the evaporation is enormous, there are 4.3 pounds of salt in every 100 of water. Carbonate of lime, necessary for shell-fish, is also carried into the ocean by rivers.

2. **Tides** are waves which, in mid-ocean, are about three feet in height, and several thousand miles in breadth.

3. **Tides are caused** by the attractive forces of the sun and moon. There are two tide-waves every day, producing two flood-tides and two ebb-tides.³³

4. **Flood-tide** is the rising of the water for six hours; **ebb-tide** is its falling, during the next six hours.

5. **The tide-waves** along the coasts of North America and Europe have an average height of four or five feet.³⁴

6. **Ocean currents** are streams of water flowing in the sea. They differ from the adjacent* waters in temperature and color.

7. **Ocean currents are caused** by the heat of the sun, and the rotation of the earth.³⁵

8. **Their direction** is governed by the winds, the earth's rotation, and the form of the continents.

9. As modified by the winds and the earth's rotation, the general directions of ocean currents are:

In equatorial regions (*See chart*), a steady flow of water westward, forming the equatorial current.

10. **In temperate latitudes**, a general movement eastward.

11. **The velocity*** of the equatorial current is about ten miles a day.

12. **The Gulf Stream** is the principal current of the Atlantic Ocean. It is deflected* from the equatorial current, in the Caribbe'an Sea.

13. **The greatest velocity of the Gulf Stream** is where it passes through Florida Strait. Here its velocity is nearly five miles an hour, and its temperature about 80° F.

14. Toward the north-east, its waters spread out and form an immense *drift* along the western coast of Europe.

15. **The winds**, blowing over this drift, become warmed; and, in turn, impart their heat to the lands over which they blow.

31. **The temperature** at the bottom, except where influenced by ocean currents, varies but little from 35° F.

32. **The top of a wave** in shallow water, or during a gale, moves faster than its lower part. This causes the top of the wave to roll forward and break into surf, or foam. The **ordinary waves** of the North Atlantic are about ten feet in height from crest to trough. Waves are seldom more than fifty feet in height.

33. **When the sun and the moon** exert their attraction in the same line, or direction, the tides rise a little higher, and fall lower, than usual. Such are called *spring-tides*. But when the forces are at right angles, the water neither rises so high, nor falls so low, as usual; such are called *neap-tides*.

34. **In V-shaped, narrow passages** which face the tide-wave, the water is piled up, because it can not spread out. The water rushes into the passage with a terrific roar. The *bore, or egre* (a'gra), as such waves are called, is often a wall-like wave, twenty feet in height, moving with the velocity of a railway train.

35. **When water is heated**, its bulk is increased. If water at 32° F., which just fills a vessel, be heated, it will expand, and some of the water run over. This occurs in the ocean. The water in tropical regions becomes heated, and its bulk being thereby increased, the water flows toward the polar regions. The cold, polar waters, which are correspondingly heavier, flow as under-currents toward the Equator.

* *dr' ver' si fled*, varied. *fäth' om*, measure of six feet. *ad jä' cent*, next to, adjoining.
ve lbe' i ty, swiftness. *de flect'*, to turn from a straight line.



CHART OF THE WORLD, ON MERCATOR'S PROJECTION, SHOWING THE OCEAN CURRENTS; THE GREAT DRAINAGE SLOPES; AND THE INLAND REGIONS.

16. The **Kuro Siwo** (kōō'rō sē'vō), or Japan current, is the principal current of the North Pacific Ocean. The prevailing winds spread its waters in an immense drift along the western coast of North America.

17. The **Arctic currents** are cold currents. Two of them issue from the Arctic Ocean, one along the eastern coast of Greenland; the other, along the western.

IX. WATERS OF THE ATMOSPHERE.

1. The heat of the sun causes water to take the form of vapor. In this form, it mingles freely with the air.

2. The amount of vapor which the air can contain depends upon the temperature of the latter. Warm air will hold much more than cold air.

3. When the air contains all the moisture it can hold at a certain temperature, it is said to be *saturated*, or at the *dew point*.¹

1. **Water may be in three forms**—solid, liquid, or gaseous (*gās' e us*). Heat changes ice to water, and water to vapor, or to steam. Air takes up, or absorbs, a large quantity of the vapor of water, the amount depending on the temperature of the air. A cubic foot at 32° F. will hold a little more than 2 grains of water in the form of vapor. At 50°, it will hold 4 grains; at 70°, 8 grains; and at 90°, it will contain nearly 15 grains. Hence, if air at 90°, which is *saturated* with moisture, be cooled to 70°, it will deposit all of the moisture in excess of 8 grains to the cubic foot.

2. **Dew** may be deposited on any body that cools the surrounding air below the point of saturation. This is shown by the drops which form on the outside of a pitcher filled with iced water.

4. If the air be cooled below the point of saturation,* a part of the vapor is condensed,* and becomes *dew, fog, clouds, rain, snow, or hail*.

5. **Dew** is the moisture deposited on clear nights, when the air becomes chilled below the point of saturation.²

6. **When dew does not form**, it is usually because the air contains no more moisture than it can hold, at the lowest temperature, during the night.

7. A **strong wind** may prevent the formation of dew, because none of the air remains in contact with the ground long enough to be cooled below the point of saturation.

8. **Fog** is partly condensed vapor, floating in the air near the earth's surface.

9. **Clouds**³ are partly condensed vapor, high in the air. They are usually between layers of air which differ in temperature. Clouds may be considered floating cisterns, or reservoirs* of water, which the air holds and carries, that it may supply rain, or dew, to the dry land.

3. **Clouds are classified** according to their forms. The *cir'rus*, or feather clouds, are the light, fleecy clouds sometimes called "cat-tails", or "mackerel" clouds. *CU'mu'lis* clouds are those which appear to be heaped, or piled up, in masses. *Strā'tus* clouds appear to be arranged in long, flat layers. The *nim'bus*, or storm cloud, is shapeless and overcasts the sky. The lower part of the nimbus consists of rain drops; the central portion, of mist; and the upper, of cloud-mist. The vapor in the atmosphere acts as a screen, intercepting the fierce heat of the sun, during the day, and preventing its escape, at night.

* *sāt u rā'tion*, state of being soaked; full. *con dēnsē'*, to make more close.
reservoir (*rēz er vvor'*), a place where any thing is kept in store.

10. Rain is the cooled vapor which falls in drops, when the moisture of the air is rapidly condensed.

11. **More rain falls** in the Torrid Zone than in any other part of the world; and more falls on the coasts of continents than in the interior.

12. Eastern coasts in the Torrid Zone, and western coasts in the temperate zones, receive more rain than other regions, because they face the rain-bearing winds.

13. Many countries whose coasts face the south, receive copious rains from the periodical winds.* India, and other parts of Southern Asia, are notable* examples.

14. **Snow** is vapor which passes into a solid form before the moisture can collect in drops.⁴

15. **Hail** is frozen rain. It is thought that hail is formed at great heights, and that the rain-drops are frozen while passing through a layer, or body, of cold air.

X. THE WATERS OF THE CONTINENTS.

1. The water that rises from the sea in the form of vapor, is carried away by the winds, and falls on the continents in the form of rain and snow.⁵

2. A part of the water sinks into porous* ground; the rest evaporates, or else flows back to the sea.

3. A **spring** is a stream of water which issues from the earth, or from some underground reservoir in which rain-water has collected.

4. **The rain-water**, in passing through the porous rocks and soil, often dissolves the soluble* mineral salts, such as common salt, soda, etc., and retains them. Such water forms *mineral springs*.⁶

5. **Spring waters** often become warm, or hot, by contact with heated volcanic rocks which surround the reservoir, or from the chemical decomposition of rocks. In this manner, *hot springs* are formed.⁷

6. A **geyser** (ġi'ser) is a hot, mineral spring, from the channel of which, jets of hot water and steam are forced high into the air at regular intervals.

7. They are, in many instances, considered a form of volcanic action.

8. **The spouting of geysers** is due to the formation of steam, deep in the channel of the spring.

9. A **river** is a large stream of water flowing in a channel on the surface of the land.

10. The water from so much of the rain and melting snow as does not sink into crevices* and porous ground, flows first in rills, or rivulets, brooks, and creeks.*

11. These small streams form larger streams, which unite to make a river, and the waters are again borne to the ocean, whence they came.

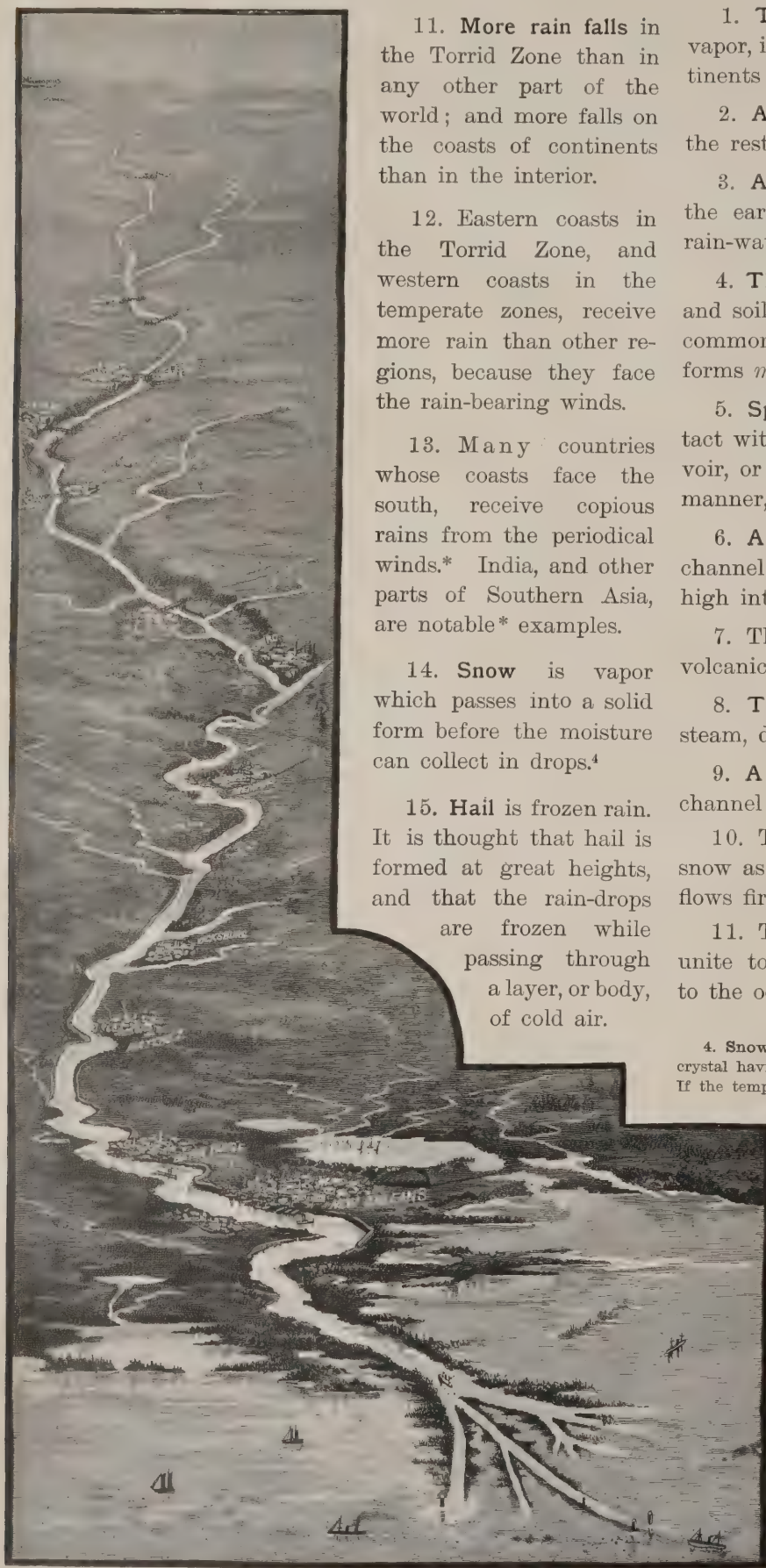
4. **Snow-flakes** are crystals of wonderful symmetry and beauty. Each is a crystal having six angles, or sides, and each angle is 60° , or some multiple of 60° . If the temperature be above 20° F. , or if the wind blow, the crystals are apt to be imperfect. They form to best advantage when the air is perfectly still, and the temperature below 20° F.

5. **A portion of the water evaporates.** In the cold regions of the Arctic Slope, nearly all of the rain finds its way back to the ocean. In the *steppe regions* of the Torrid Zone, the water is removed only by evaporation.

6. **Calcareous springs** are those which contain carbonate of lime; *soda springs* contain salts of sodium, or else potassium; *chalybeate* (kalib'eaté) *springs* hold salts of iron in solution; *sulphur springs* contain hydrogen sulphide (sul'phureted hydrogen); a *cidulous springs* hold carbon dioxide (carbonic acid gas) in solution. *Seltzer*, *Vichy* (vësh'y), and *Congress waters* come from springs of this class. In many parts of the world, notably in California and in the Caspian Sea Basin, are *springs* of *petroleum*, and *asphaltum*, or *mineral pitch*. The Island of Trinidad contains a large lake of this character.

7. The temperature of spring water is usually about 50° or 60°F.; but the water of some springs is hot, and even boiling. Nearly all hot springs are in volcanic regions, and the majority of them are mineral springs. The celebrated mineral springs of Saratoga, in New York, and Seltzer, in Germany, are cold.

* *periodical wind*, a wind blowing part of the year in one direction, and the other part in another direction. *crěv'ice*, narrow opening.
pěr'ous, having pores, or small openings. *nět'a ble*, remarkable.
sět' a ble, capable of being dissolved in fluid. *creek*, not crick.



A RIVER.—THE MISSISSIPPI AND ITS DELTA.—CITIES ON ITS BANKS.

12. The channel in which a river, or other stream of water, flows, is its *bed*. A *cañon* (kān yōn'), *gorge*, *ravine* (ravēn'), or *gulch*, is a channel or river-bed having steep, or precipitous, sides.⁸

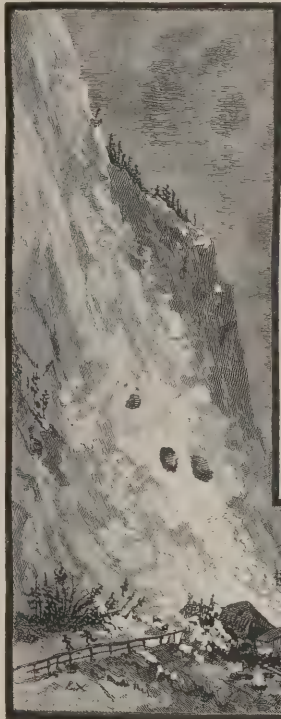
13. The source of a stream is the place where it begins; the mouth, is the place where its waters flow into another stream, or a lake or other body of water.⁹

14. A river system is a river with all its tributaries,* or branches.

15. A river basin is the land that is drained by a river and its branches.

16. A divide, or water-shed, is a ridge, or height of land, that separates river basins. It is usually a range of hills, or mountains; sometimes, however, it is only a slight undulation in a plain.

17. The delta of a river is the land formed of the sediment which the river deposits at its mouth, and along its lower course.



AN AVALANCHE.

18. An est'uary is the wide mouth of a river which faces the tide.

19. Wherever a river descends abruptly from a higher to a lower level, it forms *rapids*, or *cascades*, *cat'a racts*, or *water-falls*.

20. A lake is a body of water surrounded by land, or situated in a depression of the land. If the water collects in the depression more rapidly than it evaporates and sinks, it overflows and becomes the source of a river.¹⁰

21. The basin of a lake is the depression in which the water collects.

The waters of lakes

which overflow their basins, or discharge their waters, are always fresh; lakes having no outlets are usually salt.¹¹

8. A river may be considered as having three parts. In its upper course, the water, having great velocity, is constantly cutting its channel deeper and wider. In its middle course, the velocity is still sufficient to carry coarser sediment, but not great enough to wear its channel perceptibly. In its lower course, it deposits the sediment brought from its upper channel; and, inasmuch as it can not carry this sediment, it must flow around it. As the river is constantly building its bed higher and higher by the sediment thus brought down, it is frequently necessary to build *dikes*, or *lev'ees*, along the banks of the river, in order to protect the surrounding land from overflows, during seasons of high water.

9. Up a river is toward its source; down a river, toward its mouth. The right bank is on the right hand in descending the river; the left bank, on the left hand.

10. Lakes are natural basins, in which the rain-fall exceeds the evaporation. The water collects until it overflows the rim at its lowest place. Otherwise, the water spreads out until its surface is so great that the amount received just equals the amount evaporated.

11. The saltness of lakes having no outlets, is due to the mineral salts which are dissolved from the soil by the streams, and carried by them into the lakes.



FLOATING ICEBERGS.

22. A glacier (glā'seer) is an immense mass of ice and snow, which moves slowly down mountain slopes.

23. *Glaciers are formed from snow collecting in the ravines. This snow is changed to ice by the pressure of its own weight.*

24. *Glaciers have their origin in regions of perpetual* snow, and seldom extend below the snow-line.¹²*

25. Icebergs are large masses of floating ice. They are usually broken from polar glaciers which terminate at the sea-coast.¹³

26. An avalanche is a mass of snow, which, loosened by its own weight, dashes down the slope of a mountain, sometimes burying whole villages under great quantities of snow, rocks, and gravel.

As the water of such lakes escapes only by evaporation, the salt remains in them, and, therefore, constantly accumulates; but, where a lake has an outlet, the salt escapes to the ocean, and the lake remains fresh. Lakes are sometimes called *lochs*, or *loughs* (lōks). Small lakes are called *ponds*.

12. *Glaciers are rivers of ice. Their current is swiftest in the center of the surface, and slowest at the sides and bottom. The velocity of glaciers varies from a few inches to several hundred feet a year, being governed by the temperature and depth of the ice, and the steepness of the slope. The glacier is seamed with cracks, called cre vass'es, which extend across it. On the sides, are rocks and debris (dā brē) which roll down the mountain slopes, and lodge at the edge of the glacier; these are called moraines (mo rānz'). The lower end of the glacier usually pushes a large mass of rocks and debris ahead of it. This is the terminal moraine.*

13. From one eighth to one tenth of an icebergs is above water; the remainder is below it. Icebergs seldom exceed two or three hundred feet in height, above the surface of the water.

* *triv' a tā ry*, yielding supplies, a branch.

per pēt' a al, continual.

XI. THE ATMOSPHERE,—WINDS,—STORMS.

1. The air, or atmosphere, which surrounds the earth, is an invisible* gas.¹

2. It extends to the height of from 50 to 200 miles above the earth's surface.

3. Its weight is about one eight-hundredth that of water: a cubic foot* of air weighs one third of a grain.

4. It presses on the earth with a weight of nearly fifteen pounds on every square inch of surface.²

5. A barometer is an instrument for measuring the weight of the atmosphere.³

6. Wind is air in motion. It is caused by the heat of the sun. When air is heated, its bulk* increases, and it, therefore, rises.

7. The warm air rises, and cold air rushes in at the surface, to take its place, thus producing wind.

8. The earth's surface receives the most heat near the Equator; and, at that place, the atmosphere, being greatly warmed, rises.

9. The colder air which rushes in to take its place constitutes the trade-winds.⁴

10. The trade-winds blow south-west in the Northern Hemisphere, and north-west in the Southern Hemisphere.

11. The anti*-trade-winds⁵ blow in opposite directions, toward the north-east in the North Temperate Zone, and toward the south-east in the South Temperate Zone.

12. Monsoons are winds which blow in a certain direction during half the year, and in an opposite direction the remaining half. They prevail on the western coasts of continents in the temperate zones.

13. Variable winds are those which occur, chiefly, in the interior* of continents. They are irregular, and are due to local causes.

14. The calm belts are narrow zones, or belts, within which there is little or no wind.⁶

15. The equatorial calms are situated near the Equator: the calms of Cancer, about 30 degrees north, and the calms of Capricorn, about 30 degrees south of it.

16. Regular and constant winds seldom occur in the

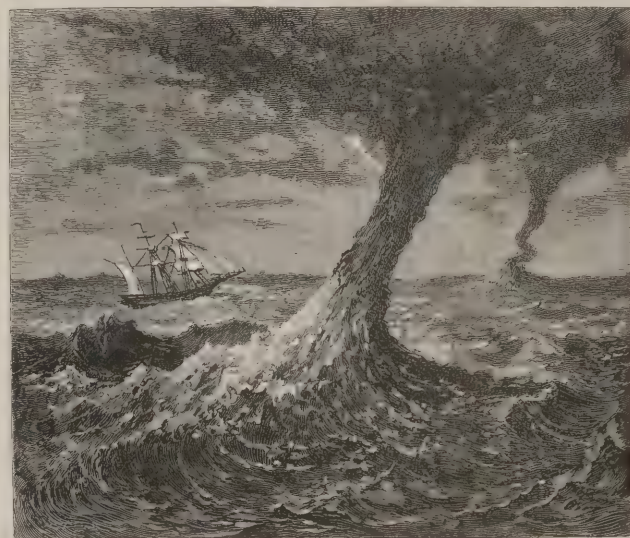
interior of continents. In such regions, the winds are local,⁷ and are caused by the unequal heating of different parts of the earth.

17. Land-and-sea breezes are confined to coast regions. During the day-time, the air above the land, receiving more heat than the air above the water, rises. The cooler wind from the sea then blows toward the land, to take its place. At night, the conditions are reversed,* and the wind blows toward the sea.

18. Storms are usually caused by the rapid rising of heated air. As the column of air rises, it parts with much of its heat. As soon as it is cooled below the dew point, the moisture in it is condensed and falls as rain.

19. The locality in which the rise of heated air occurs, is called the *area of low barometer, or storm center*. The wind blows from all directions, toward this center.

20. Sometimes the ascending column covers a small area only. In such cases, it usually acquires* a rapid whirl, and becomes exceedingly destructive.



WATER-SPOUTS.

21. Cy'clones, whirlwinds, tor na'does, and typhoons (ti fōnz') are whirling storms of this character. The directions in which they usually travel are toward the west in equatorial latitudes, and toward the east in temperate latitudes.⁸

1. The air is composed of nitrogen and oxygen. Carbon dioxide and the vapor of water are always present in variable quantities.

2. The atmosphere is not distributed around the earth in a layer of uniform thickness. The thickness is least at the poles, and greatest near the tropics—greater there than at the Equator.

3. The weight of the air varies with elevation, and hence the barometer is often employed to determine the elevation of mountains.

4. The direction of winds is greatly modified by the rotation of the earth. In temperate latitudes, the *prevailing* direction is to the east; and in intertropical latitudes, toward the west.

5. These winds are also called *variables*, as they are less constant than the trade-winds. Indeed, a large part of the time, they blow in an opposite direction, and correspond with the trade-winds.

6. The calm belts are confined, chiefly, to the ocean, and seldom extend to any great distance within the coasts of the continent. They move north and south, following the apparent motion of the sun. The equatorial calm belt never passes

south of the Equator. Calm belts are, by some scientists, regarded as regions of ascending or of descending currents of air.

7. Local winds are peculiar to each physical region. Thus, the *si rōc' co* and the *si moom'* are confined to desert regions. Both are hot, and very dry, winds. The *blizzard* is the terrific, cold wind of the plains and prairies. The *har mat' tan* is the storm wind of the West African coast.

8. Sometimes the *whirl* is so rapid that a vacuum is formed at the center. The vacuum is the *funnel-cloud* of the tornado and the *eye* of the cyclone. When such a storm occurs at sea, water is forced into this vac'u'ous* center, thereby forming a water-spout. The whirl of these storms is from east to west, in the Northern, and from west to east, in the Southern Hemisphere.

* *in vīs' i ble*, incapable of being seen.

bulk, size, mass, volume.

cū' bic fōōt, a measure equivalent to that of a solid body measuring a foot in each of its dimensions.

an' ti, against.

ac quires', attains, obtains.

in tē' ri or, the inland part of a country.

re versed', changed to the contrary.

vac' u ōūs, empty, void.

22. **Thunder-storms** are electrical phenomena.* They are thought to be due to clouds which are more highly charged with electricity* than other clouds, or the earth.

23. **Lightning** is the electricity which passes from a cloud to the earth, from the earth to a cloud, or from one cloud to another. The sudden disturbance of the air gives rise to the noise, known as thunder.

24. **The aurora borealis**, or northern lights, is also an electrical phenomenon, the cause of which is not well known. It is seen with greatest frequency in arctic regions.

25. **A mirage** (mīrāzh') is often formed when two layers of air of differing density rest quietly, one on the other, near the surface of the earth. The surface where the two layers touch each other, acts the part of a mirror, thus producing the reflection which appears to be a double image.⁹

XII. CLIMATE.

1. **Climate** is the condition of a region with respect to its heat and moisture.

2. It is **modified**, chiefly, by latitude, or distance from the Equator; inclination of the earth's axis; height above sea-level; winds; and by proximity* to the sea.¹⁰

3. **Latitude modifies the temperature** of a place.

4. **In the Torrid Zone**, the sun's rays are vertical, and give their heat directly to the earth.

5. **In polar regions**, the rays fall obliquely (obleek' n), and, therefore, part with much less of their heat.

6. From the Equator toward the frigid zones, the heat gradually decreases, until the climate becomes one of perpetual snow and ice.

7. **The change of seasons** is caused by the revolution of the earth around the sun, and the inclination of the earth's axis, which always leans in the same direction.

8. **In the Torrid Zone**, these seasons, or periods, are known as the *rainy* and the *dry* season.

9. **The mirage** is seen, chiefly, on level and rainless plains. The eye of the observer must not be at the same level as the surface of the reflecting layer of air. A mirage of the desert is never more than a foot or two above the surface of the ground. It looks like a distant body of water, merely because each layer of air reflects light in the same manner as the surface of water does. On almost any sultry, summer afternoon, a mirage may be seen over Lake Michigan, at Chicago. From the dome of Dearborn Observatory, the shipping and the tunnel-crib may be seen inverted in the air. In this case, the reflecting surface is above the eye of the observer.

10. **Modifications of climate** are due to many other causes; among them, are the following: *Places near the sea-coast* have a more even temperature than those in the interior of continents. In San Francisco, the average winter temperature is only seven or eight degrees lower than that of summer; in Bismarck, Dakota, the variation is about seventy degrees.

The tops of mountain ranges sometimes reach above the rain-bearing winds; and, while one slope may be deluged with rain, the other may be destitute of it.

In all regions over which sea-winds blow, the rain-fall is more or less periodical; in those localities where land-winds prevail, rains occur at irregular intervals.

Warm, ocean currents, such as the Gulf Stream and the Kuro Siwo, send their waters into high latitudes, where they spread out over large areas. *The warm waters give their heat* to the winds, which, in turn, impart warmth to the land.

11. **The latent heat of water** is also an important factor. When water is

9. **In temperate zones**, these changes are chiefly those of temperature. The successive seasons are called spring, summer, fall, or autumn, and winter.

10. **The seasons of the frigid zones** are modifications of both light and temperature. They consist of a day, or summer, of six months, succeeded by a night, or winter, also of six months.

11. **Altitude, also, modifies temperature.** As the height above the sea-level increases, the air becomes cooler, about one degree for each 183 feet.

12. **In the tropics**, at the height of about 16,000 feet and upward, there is perpetual snow. From this limit, the heat gradually increases toward the level of the sea. On a high mountain in the Torrid Zone, almost any degree of temperature may be found.

13. **Winds modify climate**, with respect both to temperature and moisture.¹¹

14. **In the Torrid Zone**, the moisture-bearing winds are from the north-east and the south-east, and the regions over which they blow receive copious* rains. (*See chap. XI, paragraph 10.*)

15. **In the temperate zones**, these winds are from the south-west and the north-west. They carry an abundance of heat and moisture far into the polar regions.¹² (*See chap. XI, paragraph 11.*)

16. **Isothermal* lines** are lines drawn on the maps, through places having the same average temperature.¹³

17. **Zones of climate** are bounded by isothermal lines, and hence do not correspond exactly with astronomical zones, which are bounded by parallels of latitude.

XIII. THE MINERAL KINGDOM.

1. **The three kingdoms of nature** are the mineral, animal, and vegetable.

2. **Minerals**, in regard to their uses to mankind, comprise three classes,—force-producing minerals, industrial metals, and building stones.

changed to vapor, it absorbs a vast amount of heat, every pound of water containing enough to raise the temperature of 5.37 pounds of water from the freezing to the boiling point. The vapor is carried by the winds to higher latitudes, where it is condensed, and falls as rain. With the condensation of the vapor, *this heat is set free*. In the meantime, it has been transferred to colder regions. Thus it will be seen, that *winds*, more than any other agents in nature, serve to *equalize extremes of temperature and moisture*, by transferring moisture to the rainless, and heat to the colder regions.

12. **The winter of the polar regions** is, by no means, one of intense darkness. The sun is never more than 47° below the horizon, and the greater part of the time, it is within a few degrees of it. Hence, much of the time, there is a very strong twilight. Besides this long twilight, the aurora borealis appears like great bows, or arches, in the sky, giving a brilliancy to the long winter night of the Arctic regions seldom seen in temperate and tropical regions.

13. **The height of the snow line** decreases as latitude increases. In the temperate zones, it varies from 2,000 to 4,000 feet above the sea-level. In the frigid zones, it rapidly descends to it.

* *phe nōm' e nā*, plural of phenomenon, which is any thing of remarkable appearance whose cause is not apparent.
prox' im' i ty, nearness.
V so thērm, equal heat.

ε *lōc trōg' i ty*, a power in nature, producing light, heat, concussion, and chemical changes.
ō' pī ōs, large in quantity, or amount, abundant.

3. **Coal** is the most abundant and valuable force-producing mineral. It is of vegetable origin, and has been found in nearly every country in the world, both in lowlands and highlands.¹

4. **Iron** is the most useful and widely diffused of the industrial* metals.²

5. **The ores of iron** are found in great abundance in mountain ranges, and especially in the United States.

6. **Copper**, which is of a reddish color, is found in nearly all highland regions. It was the first metal used by man. The region around Lake Superior is celebrated for copper mining.

7. **Zinc** is a white metal, found, principally, in America and Europe. Copper, mixed with zinc, forms brass. Tin, alloyed with copper, to which zinc is sometimes added, forms bronze. Tin, alloyed with lead, forms pewter and solder.³

8. **Gold and silver** are converted into coin and manufactured into many articles, both useful and ornamental.⁴

9. **Granite**⁵ and **marble**⁶ are formed from sediments, which, under great pressure, have been changed by the action of heat and water.⁷ Like gold, silver, and iron, they are found in mountain ranges.

XIV. THE VEGETABLE KINGDOM.

1. **Plants** contain cells, many of which are small tubes, through which their food is drawn.⁸

2. **Their distribution** is governed, chiefly, by conditions of heat and moisture—that is, by climate. These conditions are best fulfilled in the Torrid Zone, and there, vegetation is most abundant.

3. **Tropical regions** produce palms, spices, bamboo, rice, sugar-cane, and bread-fruit-trees.*

4. **In the temperate zones**, these give place to grains, grasses, fruit-trees, and forests of pine, maple, and oak.

5. **In polar regions**, these are, in turn, replaced by a few species of stunted shrubs, birches, and mosses.

1. The coal-fields of the United States have three times the area of all others in the world. In many cases, beds of coal were formerly peat swamps. **Peat** is a species of moss, accumulated, in some places, to a thickness of forty feet or more. These swamps, gradually sinking beneath the sea-level, became covered with sand and sediment, which were swept over them by the sea. The weight of the overlying strata (*strī'la*) pressed this vegetable matter into a flat layer, or seam. This pressure, together with the heat generated by pressure and decomposition, converted the woody tissue into coal.

2. **The commercial value of iron** is merely the cost of labor in manufacturing it. A pound of pig-iron is worth, in commerce, about one cent. A pound of steel hair-springs for watches is worth, perhaps, \$25,000.

3. **Tin** is found in England, the Island of Banca, and in various parts of the United States. **Lead** is found in plains and highlands, generally. **Nickel**, a metal having a luster surpassing that of silver, is found in Pennsylvania, Sweden, Spain, and Germany. **Salt** is found in nearly every country in the world.

4. **The precious stones** include the *dī'a mond*, *ru'by*, sapphire (*āf'īr*), emerald, *to'paz*, amethyst (*ām'e thīst*), and turquoise (*tur kōiz'*).

5. **Granite**, which is of a grayish color, is composed of three minerals,—*mica* (*mī'kā*), *fēld'spar*, and *quartz*. Valuable quarries* are in New England, Tennessee, and Georgia.

6. **Fine statuary marble** is found in Carrara (*kār rā'rā*), Italy. Much ornamental marble is found in Vermont, Tennessee, Georgia, and Maryland.

6. **Grasses** are the most widely distributed of the various species of plant life useful to mankind. They are found in all latitudes; but they thrive best in temperate regions.

7. **The grains**, which are species of grass, are native to Asia; maize, or Indian corn, is native to America; and rice, to Madagascar.

8. **Elevation above the sea-level**, or altitude, which affects temperature, also modifies the distribution of vegetation. From the sea-level in the Torrid Zone, upward to the limit of perpetual snow, there are belts of vegetation similar to those between tropical and polar regions.⁹

9. **Desert regions** are destitute of vegetation, because of the absence of moisture.

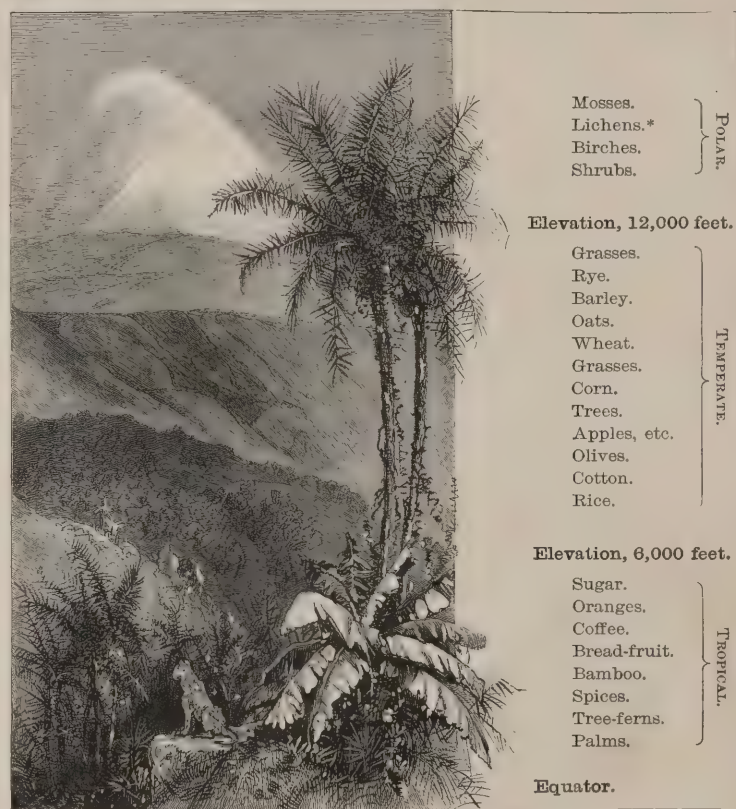


ILLUSTRATION SHOWING THAT VEGETATION VARIES WITH ALTITUDE, AS WELL AS LATITUDE.

7. **The water of the rising tide** may carry mud, or sediment, to the shore. While the water of the falling tide is receding, this sediment is deposited, and is baked, or hardened, by the sun. Each succeeding flood-tide deposits a layer, or stratum, of sediment, which, in turn, becomes hard. Sediments of the Rhine are now hardening into stone; and, on the coast of Florida, pulverized shells and corals are quickly cemented* into hard rock. Rocks formed from sediment are called sedimentary rocks; and, as they are found in strata, they are called stratified rocks, as slate. Ig'neous rocks are those formed by the action of heat, as lava and trap rock. A'queous rocks are those formed by the action of water, and are stratified. Rocks formed by the action of both heat and water are called metamorphic rocks, as granite and marble.

8. **A plant** is three fourths water. Nearly all plants absorb their food by means of roots and rootlets, which penetrate the soil in which they grow. They require, also, heat, light, and moisture. Some of the lowest forms of plant life consist of a single cell.

9. **The zones of vegetation**, like those of climates, have no sharply defined boundaries. They overlap one another; and are separated by isotherms.

* *in dūs' trī al*, pertaining to industry. *bread-fruit* is four to seven inches, in diameter.

from which are taken granite, marble, lichens (*lī'kens*), plants resembling mosses, and deriving their nourishment from slate, etc.

ce mēnt' ed, united firmly, or closely. the air. They adhere to rocks, trees, etc.

XV. THE ANIMAL KINGDOM,—MAN.

1. **Animals**, like plants, increase in the number of species, from the poles toward the Equator.

2. In **polar regions**, the land animals are distinguished by thick fur, such as the polar bear, musk-ox, and reindeer; and the marine animals, by a thick covering of blubber, or fat. These comprise the seal, walrus, and whale.

3. The **temperate zones** are the home of animals most useful to man, such as the horse, ox, cow, sheep, and hog. Here, also, are the deer, bison, bear, and wolf.

4. The **tropical regions** contain large and powerful animals, such as the elephant, camel, hippopotamus, rhinoceros, lion, tiger, and jaguar; besides reptiles and monkeys.

5. **Mankind** comprises about one and a half billions (1,500,000,000) of people.

6. **People** are classified with respect to their social conditions, as *savage*, *barbarous*, *half-civilized*, and *civilized*, or *enlightened*.

7. **Savages** are people without written laws or political government. They are ignorant and superstitious, and live by hunting and fishing.⁹

8. **Barbarous people** live, chiefly, on the products of their herds and flocks. They have no permanent homes, but wander from place to place, to find pasturage for their cattle, sheep, and goats.¹⁰

9. **Half-civilized people** are more skilled in agriculture and manufacturing than barbarous tribes. They are more or less educated, but have little or no communication with other people.

10. **Civilized, or enlightened, nations** are characterized by their knowledge of the arts and sciences, their education, literature, and capability of self-government.

11. The **occupations and general condition** of people depend, principally, upon *climate* and *productions*.

12. Within the **Torrid Zone**, where food and shelter are obtained with but little exertion, there are no powerful nations.

13. In the **North Temperate Zone**, where extremes of climate demand the greatest skill and energy, are found the most perfect types of man, and all of the great nations of the earth.

14. The five races of mankind are distinguished from one another, chiefly, by the color of the skin, and the shape

of the features. They are, the Caucasian (kau kā'sian), Mongolian (mōn gō'li an), Negro, Malay', and American Indian.

TOPICAL DIAGRAM OF THE RACES OF MANKIND.

RACE.	CHARACTERISTICS.	ABODE.
Caucasian	COLOR—usually white, sometimes dark; EYES—blue, gray, or dark; HAIR—chiefly brown; BEARD—heavy; FEATURES—regular; FOREHEAD—high.	India, Arabia, Europe (except Lapps, Finns, and the Magyars [mā'd' yorz], of Hungary), Northern Africa, and America.
Mongolian	COLOR—yellow to swarthy; EYES—black and almond-shaped; HAIR—black and straight; BEARD—scanty; CHEEK-BONES—high.	China, Japan, Hungary, Lapland, Finland, and Arctic regions (Esquimaux—ē's' lē' mō').
Negro	COLOR—black; EYES—black; HAIR—black and woolly; BEARD—scanty; LIPS—thick and protruding; NOSE—flat; FOREHEAD—low and retreating.	Central and Southern Africa, New Guinea, and Islands of Melanesia (mel an' ē' shē ā).
Malay	COLOR—brown; EYES—black and horizontal in face; HAIR—straight and black; BEARD—full.	East Indies and Polynesia (pol' ē' nē' shē ā).
American Indian	COLOR—red to swarthy, often of copper hue; EYES—black; HAIR—black; CHEEK-BONES—high.	American Continent.

15. The chief religions of the world are the Christian, Jewish, Mo ham'medan, Brahminical (brā mīn'ik al), and Buddhist (bōōd'ist).¹¹

16. **Christians** believe in the Bible. The **Jews** reject the New Testament.

17. **Mo ham'medans** believe Mo ham'med was the Great Prophet, sent especially to be their leader and teacher.¹²

18. **Brahmanism** (brā'man izm) is the religion of the inhabitants of Hindoostan and some other parts of Asia.¹³

19. **Buddhism** (bōōd'izm) is the religion taught by Buddha, a reformer of Brahminical teachings. The believers of this religion live in south-eastern Asia, and comprise about one third of the human family.¹⁴

XVI. POLITICAL GEOGRAPHY.

1. For mutual protection and benefit, people combine with one another, forming tribes and nations.

2. **Uncivilized people** congregate in tribes, and are governed by chiefs, who are their leaders, usually, by virtue of superior skill and bravery in war. Such tribes, although frequently having many ceremonial forms and customs, have no written laws. The will of the chief is law, and the lives of his followers are subject to his caprice.

3. **Civilized people** form nations, and have organized systems of laws, called **governments**.

12. **Mohammedans** believe in the Ko'ran, which contains the professed revelations of Mo ham'med, or Ma hōm'et, who was born in Arabia, about 570 A. D.

13. Originally, the word *brah'ma* meant, the offering of praise and worship. Afterward, it was used to signify a deity consisting of three gods: Brahma, the creator; Vish'nu, the preserver; and Siva (see'vā), the destroyer. Brahmanism is now a form of idolatrous worship.

14. Estimated number of **Christians**, 400,000,000; of **Jews**, 10,000,000; of **Mohammedans**, 180,000,000; of **Brahmins and Buddhists**, 680,000,000; of **heathen and fetich (fē'tich) worshipers**, 180,000,000; and of **unknown**, 50,000,000.

9. Savages place but little value on human life. Those who live by hunting are generally of a higher type than those who exist by fishing. The greater difficulties in procuring food, develop courage, skill, and the reasoning faculties.

10. **Barbarous people** are noted for their skill and bravery in the care and defense of their herds.

11. In the early history of mankind, worship was often connected with those physical powers whose origin, nature, and action were shrouded in mystery. The sun, fire, wind, and even animals, have been—and are to this day, in some places,—objects of worship.

4. The two principal forms of government are the republic and the monarchy.¹⁵

5. A republic is a government in which the laws are made by the people, and administered by officers chosen by them. Its chief executive officer is called the president.

6. The highest authority in a republic is the constitution, or written agreement.

7. A monarchy is a government in which the supreme power is held by one person during life. Monarchies are either absolute or limited.

8. An absolute monarchy is a government in which all the functions of government are vested in the ruler.

9. A limited monarchy is a government in which the laws are made by the people, and enforced by the ruler.

10. An empire is a monarchy, which usually comprises several nations. The chief ruler is called the emperor.

11. A kingdom is a monarchy, ruled by a king, or a queen.¹⁶

12. The capital of a country is the city where the laws are made.

XVII. INDUSTRIES.

1. The principal industries, or occupations, of mankind are agriculture, manufacturing, mining, fishing, and commerce.

2. Agriculture is the cultivation of the soil to obtain food, and, to a great extent, clothing. This industry gives employment to nearly half the working population of the United States.

3. Sugar-cane and coffee are cultivated in countries and states which have a warm climate.

4. Potatoes and tobacco grow best where the climate is temperate, or warm.

5. The raising of stock, for beef, pork, and wool, is profitable where there is an abundance of grass and grain.

6. The cattle industry of Texas, Colorado, and nearly all the territories of the United States, is very important.

7. The beef and pork industry is very extensive in the North Central States, where immense quantities of beef and pork are packed for shipment to nearly every part of the world.

15. For the past few centuries, there has been a strong tendency among civilized nations toward a republican form of government. Absolute monarchies become limited, and limited monarchies give rise to republics. As people become enlightened and educated, they also become capable of self-government. A constitutional government is, therefore, the best for an educated people, because it represents the common sense of the people.

16. The title of a ruler differs in different nations. The chief magistrate of a republic, is called President; the ruler of Germany, Emperor; of Russia, Czar (*zār*); of Prussia, King; of Turkey, Sultan (*sūl' tan*); of Persia, Shah (*shāh*); of Egypt, Khedive (*kā deev'*); of Japan, Mikado (*mī kī' do*). A principality is governed by a Prince; a duchy (*dūch' y*), by a Duke; an electorate, by an Elector.

17. Iron is not found in a pure, metallic state, in nature, but combined with oxygen and other mineral and earthy matter. The ores most common, are called hematites (*hēm' a tites*) and magnetites. To separate the iron, the ore is placed in a smelting* furnace with coal, coke, or charcoal, and limestone, in regular proportions. The carbon in the fuel combines with the oxygen, and the other impurities associate with the lime as a slag,* leaving the iron free. This is drawn off from the furnace

8. The great agricultural region of the United States is in the Mississippi Basin: the northern part is especially noted for grain; the southern portion, for cotton. The Pacific Coast Section, also, yields large crops of grain.

9. Manufactures include cotton, woolen, and silk goods, iron, lumber, leather, and many other articles.

10. Manufacturing and mining give employment to more than one fifth of the population of the United States.

11. Materials of which most of our clothing is made, are obtained from the cotton-plant, the sheep, and the silk-worm.

12. Cotton is the principal production of the Southern States, whose soil and climate are better adapted to its growth than those of any other part of the world.

13. The wool industry is most extensive in the North Central and the Pacific States.

14. Silk is the product of the silk-worm, which feeds on the leaves of the mulberry-tree. China, Japan, and France are celebrated for silk.

15. Lumbering is the cutting of trees into logs, which are floated down the streams to mills. There the logs are sawed into planks, boards, etc. These are afterward used in constructing houses, ships, furniture, cars, carriages, and many other things.

16. Nearly all the lumber in the United States is produced in Maine, New Hampshire, Michigan, Wisconsin, the Southern States, and the Pacific States.

17. The pine forests of the South Atlantic States yield large quantities of turpentine, rosin, and tar.

18. Leather is the skins of animals, tanned,* curried, and otherwise manufactured.

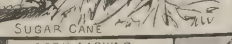
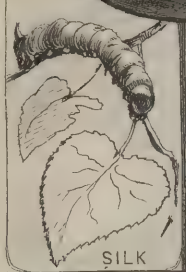
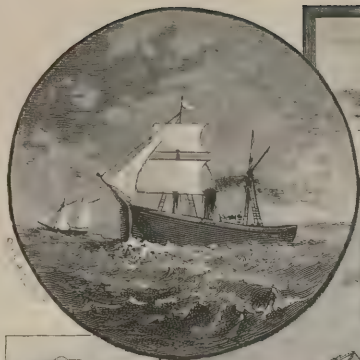
19. The great manufacturing sections of the United States are the New England and the Middle Atlantic States.

20. Iron is mined and manufactured very extensively in the eastern part of the United States, and constitutes one of the great industries of the world.¹⁷

21. Coal gives force and heat, necessary in separating metals from their ores, in constructing and operating machinery, and in performing many kinds of work, to which the strength of man would be unequal.

and run into short furrows made in sand, and is known as pig-iron, so called from its fancied resemblance, when in the furrows, to pigs lying side by side. It contains some carbon and other impurities, but by re-melting in a "cupola" furnace, it is run into fine castings. Wrought iron is made by depriving cast-iron of the carbon, which is done by re-melting in a puddling furnace through which a current of air is passed. The furnace man constantly stirs, or "puddles," the molten mass, until it becomes pasty and tough. Then it is made into balls, weighing about 200 pounds each. These are taken from the furnace, and rolled between heavy, chilled iron rollers, re-heated and rolled again, until it has become fibrous in structure, and is finally rolled into bars. Steel differs from iron in chemical conditions, and contains a certain amount of carbon, combined with the iron. It was formerly made by heating wrought iron and fine charcoal together, in a close retort. By the principal method now used, a strong current of air is passed through the molten pig-iron, until the excess of carbon is consumed. It is then cast in molds, and rolled out into rails, or other shapes.

* *smelt' ing*, melting ore for the purpose of separating the metals from other mineral substances. *slag*, dross of a metal. *tan*, to steep in an infusion of oak or other bark.



22. Gold and silver, the most precious of the metals, are mined, chiefly, in the Pacific, or Highland, Section of the United States. (See page 79, note 2.)

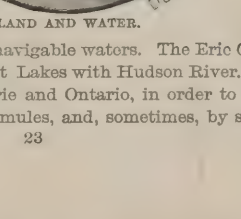
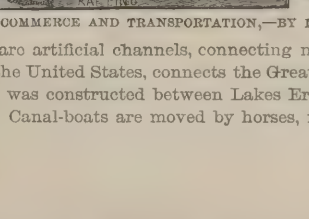
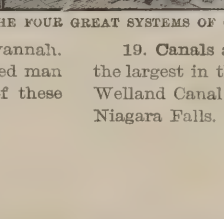
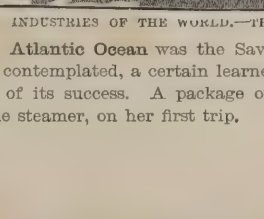
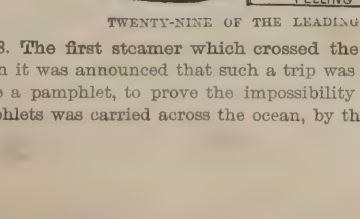
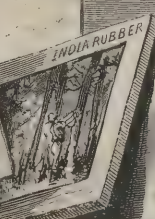
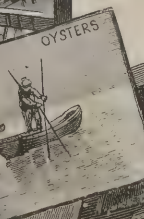
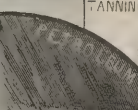
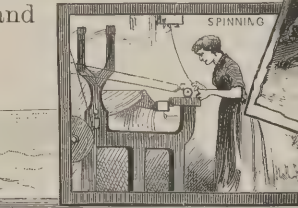
23. The fishing industry includes the catching of cod, mackerel, and herring, off the coasts of Maine and Newfoundland; of salmon, in the streams of Oregon and Washington Territory; and of oysters, in the Chesapeake and other bays; besides the preserving and curing of the same.



24. Commerce is the industry by which the products of the soil, mill, factory, forest, mine, sea, and stream are exchanged, or sold.

25. Foreign commerce is conducted by means of steamers and sailing vessels;¹⁸ domestic, or inland commerce, chiefly, by means of railroads and canals.¹⁹

26. Transportation is carried on in hot, desert regions, by means of camels; in cold, Arctic regions, by means of dog trains and reindeer; and in some mountainous regions, by means of pack-mules and llamas (lä'máz).



TWENTY-NINE OF THE LEADING INDUSTRIES OF THE WORLD.—THE FOUR GREAT SYSTEMS OF COMMERCE AND TRANSPORTATION,—BY LAND AND WATER.

18. The first steamer which crossed the Atlantic Ocean was the Savannah. When it was announced that such a trip was contemplated, a certain learned man wrote a pamphlet, to prove the impossibility of its success. A package of these pamphlets was carried across the ocean, by the steamer, on her first trip.

19. Canals are artificial channels, connecting navigable waters. The Erie Canal, the largest in the United States, connects the Great Lakes with Hudson River. The Welland Canal was constructed between Lakes Erie and Ontario, in order to avoid Niagara Falls. Canal-boats are moved by horses, mules, and, sometimes, by steam.



THIS HEMISPHERE WAS PHOTOGRAPHED FROM A GLOBE.

THE WESTERN HEMISPHERE.

GENERAL QUESTIONS.

[REFER TO THE MAP ON THIS PAGE AND TO THE PICTURE ON THE OPPOSITE PAGE.]

Maps, Circles, etc.—What is a map?—a sphere?—a hemisphere? (See pages 6 and 7.) What is the most northerly point of the sphere, or each hemisphere?—the most southerly point? What are those lines called which are drawn from the top to the bottom of a map? (See pages 8 and 9.) At what two points would all meridian lines meet, if extended? Why have men not been able to reach either pole? What great circle is drawn around globes and on maps, from east to west? Between what two points is it equally distant? What small circles are drawn from east to west? (See page 8, paragraph 27, and diagram.) Are these circles really on the earth? Why are they drawn on globes and maps?

Latitude.—What are those numbers called which appear on the margin of this map? What number is in this margin at the Equator? What does it mean? What is the largest number of degrees in this margin? What point is ninety degrees north of the Equator?—ninety degrees south of the Equator? From what is latitude reckoned? In what directions and toward what points is it reckoned?

Longitude.—What are those numbers called which appear on the Equator? From what meridian is longitude reckoned? What is the longitude of places on that meridian? (See page 27.) What is the greatest longitude a place can have? Over what places does the meridian of 180° pass? What meridian passes through the middle of South America? Through what North American gulf does that meridian pass? Mention some places in the Western Hemisphere whose latitude is 0, twenty degrees, forty degrees, sixty degrees, eighty degrees, ten degrees, forty-five degrees. Mention some places whose longitude is sixty degrees, (Follow the meridian marked sixty degrees,) eighty degrees, one hundred and eighty degrees.

What island is in fifty degrees north latitude, and sixty degrees west longitude?—in fifty degrees south latitude, and sixty degrees west longitude? What bay is in sixty degrees north latitude, and eighty degrees west longitude? What is the latitude of New York?—its longitude? What is the latitude of San Francisco?—its longitude?

Zones.—What part of North America is crossed by the Arctic Circle?—by the Tropic of Cancer? What zone is between these two circles? What two straits are crossed by the Arctic Circle? What ocean is north of the Arctic Circle? What large gulf is crossed by the Tropic of Cancer?

What tropic is south of the Equator? Between what two circles is the South Temperate Zone? What ocean is south of the Antarctic Circle? What zone is north of the Arctic Circle?—south of the Antarctic Circle?

In what zone is the greater part of North America?—the greater part of South America?—the northern part of North America?—the southern part?—the southern part of South America?

Which zone is the hottest?—which are the coldest?—which are the most pleasant to live in?

Grand Divisions.—Of what two grand divisions is the Western Continent composed? By what isthmus are they joined? What ocean is east of them?—west? What ocean is north of North America?—south of South America? Which is the largest ocean?—the smallest? In what direction is South America from North America? What meridian crosses the western part of South America? Through what part of North America does that meridian pass?



Islands.—What islands are in the Torrid Zone?—in the North Temperate Zone?—in the South Temperate Zone?

What waters surround the West Indies?—Newfoundland (nu' fond land)? What water surrounds the Sandwich Islands?—Iceland?—New Zealand?

Capes.—What cape on the eastern coast of North America?—what two on the western coast? What cape forms the most eastern point of South America?—the most southern?—the most western?

Mountains.—What mountains in the western part of North America?—of South America? In what general direction do the Rocky Mountains extend? In what directions do the Andes extend?

Rivers.—On which side of the mountains are the longest rivers? Mention the largest river in South America, in North America. What river flows into the Mississippi River? Into what does the Mississippi flow?—the Amazon? What large river flows into the Arctic Ocean? Which of these rivers flow in an easterly direction?—southerly?—northerly? Into what ocean do most of the rivers of this continent flow?

Climate, Races, etc.—Which is the warmer, the Amazon, or the Mississippi?—the Missouri, or the Mackenzie River?—Baffin Bay, or the Gulf of Mexico?—Iceland, or the Sandwich Islands? What different climates would you find during a voyage from Baffin Bay, around Cape Horn, and to Bering Strait? Which part of the Mississippi River is the warmer—its mouth, or its source? What part of the Mackenzie River is the warmer? What races of mankind inhabit the Western Hemisphere? Describe their appearance, color of the skin, and dress.

Voyages.—In what direction would you sail from Baffin Bay to Newfoundland?—from Newfoundland to the Gulf of Mexico?—from the Gulf of Mexico to South America?—from South America to New Zealand? Through what strait would you sail from the Pacific to the Atlantic Ocean?



THIS HEMISPHERE WAS PHOTOGRAPHED FROM A GLOBE.

THE EASTERN HEMISPHERE.

GENERAL QUESTIONS.

[REFER TO THE MAP ON THIS PAGE, AND TO THE PICTURE ON THE OPPOSITE PAGE.]

Which hemisphere contains the more land?—the more water? What four oceans are partly in the Eastern Hemisphere? What ocean is entirely in it?

Is the greater part of the land north, or south of the Equator?

Of what three grand divisions does the Eastern Continent consist? Which is the largest?—the smallest? Which is crossed by the Equator? What division of the earth is composed of islands? In what ocean are these islands? What large island in this hemisphere is called a continent? (See page 11, paragraph 7.)

Circles and Zones.—Through what part of Africa does the Tropic of Cancer pass?—through what part of Asia? What zones are separated by this tropic?

In what zone is the greater part of Asia?—of Europe?—of Africa?

What tropic passes through Australia and South Africa? What zones are separated by that tropic?

In what zone is South Africa?—South Australia?—North Australia?—Northern Europe?—Northern Asia.

Latitude and Longitude.—What large islands are crossed by the Equator?—what gulf? In what latitude are places which are crossed by the Equator? (See margin of the map, at the Equator.)

Which extends farther north, Europe, or Asia? In about what latitude is the north coast of Europe?—of Asia?—the north coast of the Mediterranean Sea?—the middle of the Japan Sea?—of the Baltic Sea?

What is the latitude of the Tropic of Cancer?—(see pages 9 and 10),—of the Tropic of Capricorn?—of the Arctic Circle?—of the Antarctic Circle?

What places are in longitude 0°? (See all places on the meridian passing through, or near, London.) What place is in latitude 0°, and longitude 0°? In what longitude is the eastern part of the Black Sea?—of the Japan Sea?

What part of the world is in twenty degrees north latitude, and forty degrees east longitude?—in ten degrees south latitude, and one hundred and sixty degrees east longitude?—in twenty degrees south latitude, and forty degrees east longitude?

Grand Divisions.—In what direction is Europe from Asia?—from Africa? What ocean north of Europe?—west? What ocean north of Asia?—east?—south? What ocean west of Africa?—south-east?

Would you ride, or sail, from Europe to Asia?—from Europe to Africa?—from Africa to Australia?—from Africa to Asia?

Seas, etc.—Which is the largest sea in the world? With what ocean is it connected? Between what two grand divisions is the Mediterranean Sea? What sea south of Asia?—south-east?—north-east?—south-west? What sea east of the British Isles? What sea projects far into Europe? What two seas between Asia and Europe? What sea east of the Caspian Sea? What bay south of Asia?—south-west of Europe? What gulf west of Africa?

Islands.—What group of isles, or islands, west of Europe? What islands east of Asia?—south-east of Asia? What two large islands are crossed by the Equator? What island north of Australia?—south-east?—south-east of Africa?—north-east of Europe?—south-east of Hindoostan?

Capes.—What is the northern cape of Europe?—of Asia?—the western cape of Africa? What cape is in the southern part of Africa?

Mountains.—What mountains in the southern part of Asia?—of Europe?—between Asia and Europe?—in the northern part of Africa?—in the western part of Africa?—in the eastern part?



Rivers.—What three large rivers in Africa? Which flows north?—south?—west? Into what water does the Nile flow?—the Congo? the Niger? What two large rivers in Europe? Into what sea does the Danube flow?—the Volga? What three rivers in Asia flow east?—north?

Cities.—In one of the British Isles is the largest city in the world,—Mention it. Mention two of the largest cities on the Continent of Europe. In what direction from London is Paris?—Berlin? In what zone are these three cities? One of the largest cities in the world is in Asia,—Mention it. What is the latitude of Pekin?—of Paris?—of Berlin?—of London?

Climates.—Which is the warmest of the grand divisions? Which extends into the coldest regions? In what two zones is Europe?—Australia? In what three zones is Africa?—Asia? Which is warmer, Europe, or Australia?—the Japan Islands, or Borneo?—Madagascar, or Nova Zembla?—the Lena River, or the Congo?—the Nile, or the Volga? What different climates would you find during a voyage from the British Isles to Australia? Describe the kinds of people who inhabit the Eastern Hemisphere. Describe their complexion, dress, etc.

Voyages.—In what direction would you sail from London to Nova Zembla? On what waters? Would you sail into warmer, or colder waters, on your voyage? In what directions would you sail from London to the Cape of Good Hope? On what waters? Would you sail into colder, or warmer waters?

On what waters would you sail from the Cape of Good Hope to Australia?—to the Red Sea?—from the Red Sea to Borneo? Would you require winter, or summer, clothing during this voyage?

In what directions would you sail from Madagascar to the Okhotsk Sea? On what waters would you sail? In what part of that voyage would you require warm clothing?—light clothing?



NORTH AMERICA

SCALE AS 1:35,300,000, OR 557 MILES TO THE INCH

Scale of Statute Miles
0 90 180 360 540 720

Scale of Railroad Time (30 Miles per Hour)
0 3 6 12 18 24 Hours

Scale of Steamship Time (15 Miles per Hour)
0 6 12 24 36 48

SOUTH AMERICA

Longitude from Washington

PRINCIPAL PRODUCTS AND PRINCIPAL SEAPORTS

Highlands, Buff., Lowlands, Green, Furs, etc.

COMPARATIVE AREA

KANSAS 80,000 SQUARE MILES

SURFACE BETWEEN SAN FRANCISCO AND HALIFAX

10,000 20,000 30,000

NORTH AMERICA.

GENERAL QUESTIONS.

Location.—In what hemisphere is North America? Mention the oceans that wash its coast. In what direction from North America is the Atlantic Ocean?—the Pacific?—the Arctic? What part of North America is north of the Pacific Ocean? Which of these oceans do we know the least about? Why? Which ocean do vessels cross in going to Europe?

Latitude and Longitude.—How are parallels of latitude indicated on this map? Why are the lines curved? If you were to travel over North America, would you see these lines? Why are they placed on the map? Is North America in north, or south, latitude? Between what degrees does it lie, so far as discovered? How many miles make a degree on a meridian? What parallel of latitude passes through the central part of the United States? What parallels of latitude touch the northern and southern boundaries of the United States? How long is North America?

What countries of Europe are in the same latitude as the Dominion of Canada?—(See margin of the map.)—Greenland?—United States? What two countries are in the same latitude as Northern Africa?

What lines meet at the top of this map? At what point do they meet? In what direction do they extend? Why are they closer together at the Arctic Ocean than at the Gulf of Mexico? What is longitude? What is its use? What is the length of a degree of longitude, at the Equator?—(See page 9, note 5.)—on the parallel of 40°?—of 80°?—at the poles? How long does it take the earth to make a complete rotation?*

Into how many degrees may a circle be divided? How many degrees are turned to the sun in an hour? What is the longitude of the most eastern part of the United States?—of the most western part? How many degrees of longitude between these two points?

What is the difference in time between the eastern and western parts of the United States?—of the Dominion of Canada?—of Mexico? Upon what part of North America does the sun first rise? Find the difference in longitude, and in time, between New York and Chicago (*she ky' gō*),—Ottawa and San Francisco (*sān frān sīs' kō*). Is there any difference in time between St. Louis (*sānt lōō' is*) and New Orleans (*ōr' le ans*)? Why? What is the length of the longest day on the parallel of 40°?—of 60°?—of 70°?—of 80°? (See east margin of the map.)

Outline.—In what direction from the United States is Hudson Bay?—the Gulf of Mexico? Which is the larger, the Gulf of Mexico, or Hudson Bay? In what direction from Greenland is Baffin Bay? Through what water would you pass, to reach Baffin Bay, from the Atlantic Ocean? In what direction from Alaska (*a lās' ka*) is Bering (*bē' ring*) Sea? What connects it with the Arctic Ocean?

Islands.—In what direction does Greenland extend? (Observe direction of meridians.) In what direction from Greenland is Iceland? What large island at the entrance to the Gulf of St. Lawrence? Mention two islands south-west of the Dominion of Canada,—three large islands south-east of the United States. Which ocean contains the most important islands?

Peninsulas.—What peninsula projects from the south-western part of Alaska?—from the south-eastern part of the Dominion of Canada? Into what water does the Peninsula of Yucatan project? What gulf divides Mexico into two parts? What is the north-western part called?

Capes.—What cape projects from Alaska into the Arctic Ocean? What is the southern cape of Greenland?—of Nova Scotia (*nō' va skō' shō' a*)? Where is another cape of the same name? What is the most north-western cape of the United States? Where is Cape Mendocino (*mēn' dō sē' no*)?—Cape Hatteras?—Cape Race?

Mountains.—In what general direction do the mountains in North America extend? What mountains in the eastern part of North America?—in the western part? How far do they extend? In what directions does the surface, between these mountains, slope? Where are the volcanoes of North America? What large lakes between the Dominion of Canada and the United States? What river is their outlet? Which of the great lakes is entirely within the United States?

Rivers.—Mention the largest river of North America. Where is it? If you should start at the Gulf of Mexico, and sail on that river, would you sail up, or down?—north, or south? Where is its delta?—its source? Mention its largest branch,—two other branches. What large river flows into the Arctic Ocean? Of what large lakes is it the outlet? What large river flows through Alaska? What river forms part of the

boundary between the United States and Mexico? What large river flows into the Pacific Ocean?—into the Gulf of California?

Countries.—What large territory in the north-western part of North America? To what country does it belong? What country borders on the Arctic, Atlantic, and Pacific oceans? What country south of that country? What country lies between the Gulf of Mexico and the Pacific Ocean? What country is joined by the Isthmus of Panama to South America? Does the Isthmus belong to North America, or South America? In what direction is it from Mexico?

Climate.—How far north of the Equator may the sun's rays be vertical? What is that parallel called? (See page 9.) When the sun is vertical at this tropic, how far north does the sun's light extend? What is the parallel called which there limits the sun's light? Through what countries does the Arctic Circle pass? Is the climate as warm at the Arctic Circle, as at the Tropic of Cancer? Why? What zone is north of the Arctic Circle? Locate the most northern point reached by explorers. (83° 24', by Brainard and Lockwood, of the Greely expedition.)

Zones.—Would Greenland and the northern part of the Dominion of Canada be a pleasant place for us to live in? Why? In what zone do we live? Is any part of Alaska in this zone?—the Dominion of Canada? What country partly in the North Temperate, and partly in the Torrid Zone? Have all parts of the Temperate Zone the same temperature? Which part is the colder? What is the mean temperature of the southern part of the United States?—(See margin of map.)—the northern part? Trace the isotherms, or lines of temperature (*brown, dotted lines*), across the map, and see whether they extend due east and west. In what different ways is climate affected? (See page 19, paragraph 16, and note 10.)

Productions.—Mention the principal products and animals of the northern part of the North Temperate Zone,—the central part,—the southern. What are the principal products of the Torrid Zone of North America? (See chart of principal products on the opposite map.) Why could not these be raised in the northern part of the North Temperate Zone? What articles of food are obtained from the Frigid Zone? In what parts of North America are iron and coal obtained?—gold and silver?—furs? Where is grain raised?—tobacco?—sugar-cane?—coffee?

Cities.—Mention five large cities situated on the Atlantic Coast,—one on the Pacific Coast,—one on the banks of the Mississippi, near its delta,—one on the shore of one of the Great Lakes,—one on the coast of the Gulf of Mexico,—one on the St. Lawrence River. Mention the capital of the Dominion of Canada,—of the United States,—of Mexico.

Commercial Geography.—How long would it take to go from New York to the Isthmus of Panama by steamer?—(See red lines on maps divided into distances sailed every twenty-four hours)—from the Isthmus to San Francisco?—from New York to Chicago by railroad?—to St. Louis?—to New Orleans? What cargo would a steamer be likely to bring from Cuba to New York? From what port would she start? How long would it take? What cargo from New Orleans?—from Mexico?

Comparative Time.—When it is noon at London, what time is it at the east coast of Iceland?—at Cape Farewell?—near the east coast of Nova Scotia?—at Philadelphia?—at St. Louis and New Orleans?—at Denver?—at Sitka, in Alaska?—along the west coast of Alaska? Where is it midnight? How often would a person traveling from San Francisco to New York have to change the time of his watch to have it correspond to standard time? How much would he change it each time? Must the hands be turned forward, or backward?

Map Drawing.—Locate Bering Strait, and in a south-east direction, at the distance equal to nine times the length of Kansas, locate the Strait of Belle Isle; thence, south-west, at the same distance—nine measures—locate the most southern point of North America.

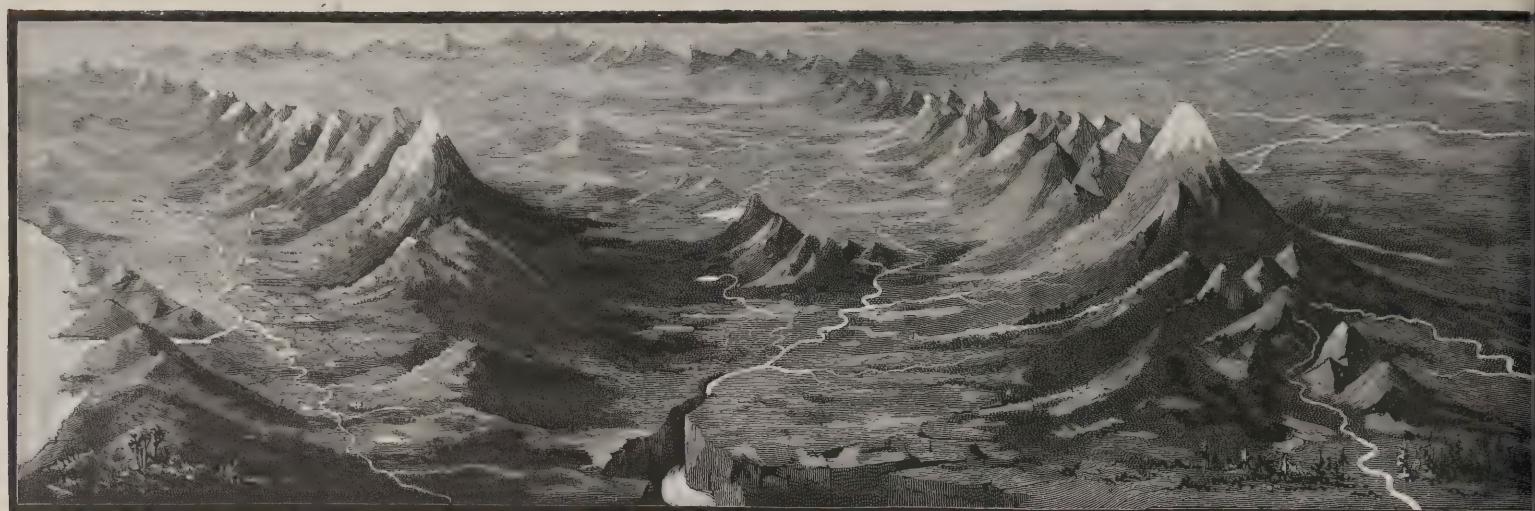
The Isthmus of Panama is a little over fourteen measures from Bering Strait. Between these three points, draw the outline of North America. The distance from the Strait of Belle Isle to Florida Strait is six measures; from Bering Strait to the north-west corner of the United States, five measures; along the Pacific Coast of the United States, three measures; and of Mexico, five measures.

By means of these measures, each of which is 400 miles, the several important distances may be easily remembered, and a map of any size may be drawn, either on paper, or the blackboard.

Locate the principal capes, mountains, rivers, and cities, and mark the boundaries of the countries.

Notice that the meridians on this map of North America are drawn just fifteen degrees apart. The sun seems to pass from one to another every hour. These meridians are, therefore, called *hour circles*. On the globe, there can be twenty-four of these meridians, or hour circles. All places through which a certain meridian passes, have the same time of day. A person traveling north or south, does not change the time of his watch. (See page 8, paragraph 17.)

* As there are 360° in every circle, and the earth makes a complete rotation from west to east every twenty-four hours, it must turn fifteen degrees each hour, or one degree in four minutes. Philadelphia is thirty degrees east of Denver; therefore the sun rises at Philadelphia two hours sooner than at Denver. When it is noon at Philadelphia, it is ten A.M. at Denver, because it requires two hours for the earth to move through thirty degrees in its rotation on its axis.



PACIFIC COAST AND SLOPE.

SIERRA NEVADA MOUNTAINS.

GRAND CAÑON,—GREAT BASIN,—GREAT SALT LAKE,—ROCKY MOUNTAINS.

RIO GRANDE,—A

NORTH AMERICA.

1. **Position.**—North America is the northern division of the Western Continent. It extends almost from the North Pole to the Equator. It is situated in three zones.

2. **Size and Outline.**—The shape of North America is nearly that of a triangle; broad at the north, and tapering almost to a point at the south. Its length, from Grinnell Land to the Isthmus of Panama, is nearly 5,000 miles. Its area is equal to one half that of Asia, or two and one half times that of Europe. Its northern and eastern coasts are remarkable for numerous indentations and good harbors; while the western coast has but few.

3. **Islands.**—Several groups of islands form a part of this grand division. The West Indies and the Aleutian Islands¹ are mountain ranges partly submerged.* Both groups contain active volcanoes. Many of the West India Islands are of coral origin.

4. **Surface.**—The western part of the continent is a high plateau, on which are many nearly parallel ranges of mountains. The direction of these ranges is from north-west to south-east. They constitute the Rocky Mountain System, and form the main axis of the continent. The culminating* ranges of this system inclose a large, oval-shaped plateau, called the Great Basin.²

5. *The Appalachian* System*, in the eastern part, is composed of several parallel ranges, extending from north-east to south-west. Their average height is about 3,000 feet, or about one third that of the Western Highlands.

6. *Volcanoes* are numerous in the Western Highlands, and several of them are constantly active.³

7. *The highest peak* of the Rocky Mountain System is Mt. St. Elias (19,500 feet); and of the Appalachian System, Mt. Mitchell (6,707 feet).

8. *The great central plain*, extending from Hudson Bay to the Gulf of Mexico, lies between the two mountain systems. The Height of Land, an almost imperceptible* divide,* crosses the plain, separating the Arctic Slope from the Gulf Slope.

9. **Lakes.**—The lakes of North America are remarkable for their number and size. If a straight line were drawn from Chesapeake Bay to the mouth of the Mackenzie River, it would pass through nearly every large lake in North America.⁴

10. *The Great Lakes* contain about one half the fresh water on the globe. Lake Superior, the largest, however, is exceeded* in size by Lake Victoria, in Africa.

11. *Salt and alkaline* lakes* are numerous in the Pacific Highlands. Great Salt Lake, in Utah, has an area twice that of Rhode Island. With the exception of the Caspian Sea, it is the largest salt lake on the globe.

12. **Rivers.**—The river-basins and drainage slopes of North America are well defined. They consist of the Arctic Slope, the Hudson Bay Basin, the St. Lawrence Basin, the Atlantic Slope, the Mississippi Basin, the Great Basin, and the Pacific Slope. A portion of the Great Basin is drained by the Colorado River. A large area is a high, treeless region, whose waters are partly removed by evaporation.

1. Nearly every island of the Aleutian (*a lū shā an*) group is volcanic.

2. **The Rocky Mountain System** is, for convenience, made to include all the numerous ranges of the Western Highlands. This system which extends along the entire western coast of North America and South America, is often called the *cordillera* (mountain ranges).

3. *Bo go sloff*, a volcanic peak near *Unalashka*, one of the Aleutian Islands, and *St. Augustine* (*a' gūs tēn*) in Cook's Inlet, were in a state of eruption in 1884. *Papocatepetl* (*pō pō kūt ā pā tū*) and *Jorullo* (*ho rōō' yō*), in Mexico, are both active.

4. **The lakes** of North America are, by many geologists, attributed to the action of glaciers.

5. **The Pacific Slope**, in regard to climate and productions, differs considerably from the rest of the continent. Its climate is oceanic, rather than continental.

* *submerged*, under water.

vide, a water-shed.

cū' mī nāt īng, highest.

im per cēp' tī ble, not easily seen.

ā' ka līne, containing lime, magnesia, etc. *ex cēd' ed*, excelled, surpassed.

Ap pa lū' chā an Mountains, often called *Al' le ghā ny* Mountains.



MISSISSIPPI RIVER,—THE PLAINS,—MISSOURI RIVER,—MISSISSIPPI RIVER AND BASIN,—ALLEGHANY MOUNTAINS.

ATLANTIC SLOPE.

CHESAPEAKE BAY,—ATLANTIC COAST.

13. *The Mississippi Basin* is the largest basin in the world, excepting that of the Amazon River. Its chief stream, the Mississippi and Missouri, exceeds every other river in length.

14. *The Yukon* (yū'kōn) *River*, second in size, is, in many respects, unlike any other river on the continent. Its upper course is remarkable for falls and rapids. Its lower part contains many islands, and is often five or six miles wide.

15. *The Columbia, Colorado* (kōlō'rā'dō), and many of their tributaries which rise in the interior of the continent, flow, in some places, through deep cañons.

16. **The soil**, where sufficiently watered, is very productive. The Mississippi Basin, and the slopes of the Atlantic Ocean and the Gulf of Mexico, contain soil of great fertility.

17. **Climate**.—On the Pacific Coast, the climate is much milder than in corresponding latitudes on the Atlantic Coast. The former region receives the winds warmed by the waters of the Kuro Siwo, or Japan Current, while the latter receives the land-winds from the interior, which are very hot in summer, and cold in winter.⁵

18. *The northern part* of the continent, being in the North Frigid Zone, is extremely cold; the central portion, lying within the North Temperate Zone, is characterized by hot summers and cold winters; the southern part, situated in the Torrid Zone, has a tropical climate.

19. *The rain-fall* is greatest in the north-west and south-east, the regions which face the moisture-laden winds of the ocean. The rains of the Pacific Coast fall mostly in winter. Comparatively little rain falls in the Great Basin.

20. **Vegetation**.—In northern regions, vegetation is limited to mosses, lichens, and a few shrubs. A belt of cone-bearing and deciduous trees extends through the middle of the Temperate Zone. In the south, these are replaced by palms, tree-ferns, bananas, and agaves (a gā' ves).

21. *The grasses* are abundant throughout the Temperate Zone. Indian corn and tobacco are native to North America.

22. **Animals**.—The fur seal, whale, walrus, polar bear, and musk-ox are the most important animals of the northern regions. The bison, deer, bear, wolf, and panther are common in the north central part. The grizzly bear is found in North America only. The monkey and the alligator are characteristic of the tropical regions.

23. *Reptiles* are numerous south of the 35th parallel. Nearly 500 species of birds are known. Fish are abundant; the cod, salmon, herring, and mackerel are valuable as food.

24. **Minerals**.—The mineral resources of North America surpass those of any other continent. Iron and coal, minerals on which civilization and commerce so greatly depend, are abundant and widely distributed. Petroleum and natural illuminating gas are found in the Alleghany Mountains and the Coast Range. Gold, silver, and quick-silver are found chiefly in the Western Highlands; copper and lead, in the vicinity of the Great Lakes; and zinc, in the Eastern Highlands.

25. **People**.—The copper-colored race, commonly known as American Indians, inhabited North America at the time of the explorations in the 15th and 16th centuries. A civilized people preceding these had disappeared from the region which now constitutes the United States, as the ruins of their habitations bear witness. (See page 32, note 8.)

26. *Civilized people* were found by the Spanish explorers of Mexico. They were conquered by the Spaniards, and gradually disappeared.

27. *The Esquimaux*, who are found in the Arctic Regions only, are thought by many to be of Mongolian origin. The *Indians*, also, are said to be of Mongolian descent, and to have come, originally, from Asia.

28. *The Caucasian, or white race*, the ruling element of the population, are the descendants of Europeans. The inhabitants of Mexico and Central America are the descendants, in part, of Spaniards and native Indians.

29. *The Negroes*, originally brought to America as slaves, are fast becoming educated.

30. **Industries.**—The geographical distribution of the various industries is more noticeable in North America than in the other continents. Foreign commerce, manufactures, and fisheries are confined chiefly to the coasts and navigable streams.

31. *Agriculture* is carried on, principally, throughout the fertile prairies and river-valleys of the interior. Stock-raising is most profitable where there are mild winters and an abundance of grass.

32. *Mining* is a leading industry in the highlands.

33. **North America** includes Danish America, British America, the United States of America, Mexico, Central America, and the West Indies.

34. **Danish America** belongs to the Kingdom of Denmark. It comprises Greenland, Iceland, and a few smaller islands.

35. **Greenland** extends farther north than any other country, or to within about 400 miles of the North Pole. Its area is nearly one third that of the United States.

36. *The surface* of Greenland is covered with ice and snow. *The coasts* are scored by enormous glaciers.⁶ *The products* are fish, oil, and reindeer skins.

37. *The people* comprise a few Danes and a number of Esquimau tribes.⁷

38. **Iceland**, which is about half the size of Kansas, is noted for volcanoes, geysers, glaciers, and lava fields. Its southern part has a milder climate than its northern, and contains all the settlements.

39. *The Icelanders* are generally educated. Their trade is carried on with Copenhagen, the capital of Denmark. Their capital, Reikiavik (rē' kī a vīk), contains a college.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about North America, mentioning the following topics:

POSITION,—Latitude of most northern and most southern points—longitude of the most eastern and the most western points—in what zones—difference in time between eastern and western points.

SIZE,—Extent from north to south and from east to west, in miles and in railroad time (use scales).

SURFACE,—Where mountainous—level—principal mountains—lakes—rivers.

CLIMATE,—Where cold—temperate—hot—dry—moist.

PRODUCTS,—Trees and plants of different zones—minerals.

WILD ANIMALS,—Which are peculiar to the Torrid Zone—the North Temperate Zone—the North Frigid Zone.

PEOPLE,—Different races—languages—peculiar dress—industries.

HISTORY,—When discovered—names of early explorers—countries which sent them—inducements which led to the explorations—important results.

MODEL FOR WRITTEN EXERCISES ON THE CONTINENTS.—NORTH AMERICA.

Highest Land	Mountains and plateaus in west and south
Lowest Land	Plains and plateaus in center, marshes in east
Mountains	Rocky, Sierra Nevada, Sierra Madre, Cascade
Largest Lakes	Superior, Michigan, Huron, Great Bear
Largest Rivers	Missouri, Mississippi, Yukon, Mackenzie, Rio Grande, St. Lawrence
Largest Islands	Greenland, Cuba, Newfoundland, Iceland

The arrows indicate the general directions in which the rivers flow.

6. Submerged ruins of former settlements are occasionally found, giving rise to the opinion that a part of Greenland is sinking. A few fertile valleys are in the southern part.

7. The principal colonies are at Upernavik (oo pēr' nā vīk), Godhavn (god' hōvn), and Godthaab (god' tāb).

8. **Historical Notes.**—There is no good reason for believing that the people known as the *Mound Builders* were contemporary with the Aztecs whom Cōr'tez found in Mexico, or related to them. On the contrary, there is much evidence to show that the Aztecs were themselves preceded by a race superior to them, in civilization.

9. *The Northmen* were the first explorers of the north-eastern coast of North America, of whom there is any historical record. It seems certain that *Lief Er'ic son* sailed along the coast as far south as New England, about the year 1000. The record begins, however, with the discovery of the West Indies by *Columbus*, in

1492. Three years later, the *Cū'vots* visited Newfoundland, and explored the coast as far south as Florida. *Cortez* conquered and explored Mexico. *Bāl dō' a* crossed Central America and discovered the Pacific Ocean. The *French* took possession of Canada. *Jēg' d ūt priests* explored the Mississippi Basin from north to south. *English* colonization began with the settlement of Jamestown, Va.

10. *Iceland* was discovered in the 9th century by Nōr'se, or Norwegian (nōr vēr' jē an), explorers. Irish colonists were among the earliest settlers. Norwegian colonies were afterward established in several parts of the island. For 400 years, Iceland was a flourishing republic; but it afterward became a dependency of Denmark. Under the harsh laws which forbade commerce with any but Copenhagen merchants, the colony was nearly abandoned. Wiser laws, in time, prevailed, and Iceland has regained much of its former importance. The people, though nominally subjects of Denmark, make and execute their own laws.

THE UNITED STATES.

GENERAL QUESTIONS.

Location.—In what part of North America is this country? What part of it is nearest the Equator?—the North Pole? By what ocean is it bounded on the east?—on the west?—by what gulf on the south?—by what country on the south-west? What provinces and territories of Canada border on the United States? What two continents are nearly the same in extent from east to west as the United States? (*See diagrams of comparative area, at foot of map.*) Which is nearly the same in area?

Latitude and Longitude.—What parallel of latitude forms part of the northern boundary? What parallel crosses Florida Strait? What city in France is in almost the same latitude as the northern boundary of the United States? (*See red reference, north of Minnesota.*) What great city in England is farther north than that boundary? Between what parallels of latitude is Alaska? What is the longitude, reckoned from Greenwich, of the most eastern part of the United States?—of the most western, not including Alaska?

Outline.—What bay north-east of the United States? What strait south-east? What large bay nearly midway between them? In which direction does the Atlantic Coast extend? What capes are the most prominent on the Atlantic Coast?—on the Pacific Coast? On what coast are bays and other arms of the ocean numerous? Which is the most north-eastern state?—the most south-eastern? What two are farthest west? What state and territories border on Mexico?

Mountains.—In what part of this country is the great highland region? Mention its principal mountains. How far from the Pacific Ocean are those mountains? (*Use the scale of miles.*) How far are they from the Mississippi River? How far is the Mississippi River from the Atlantic Ocean? What mountains between that river and the Atlantic Ocean?—Mention the highest peaks of the Sierra Nevada Mountains,—of the Rocky Mountains,—of the Appalachian Mountains.

Lakes and Rivers.—What four large lakes on the north? Which is the largest lake in the United States? Mention the largest lake west of the Rocky Mountains? In what territory is it?

Mention four large rivers which flow into the Mississippi River. Which have their sources in the Rocky Mountains? In what direction do they flow? Which flows into the Mississippi from the east? In what direction does it flow? What gulf receives the water of these rivers? What large river in the north-west? Into what ocean does that river flow?

States and Territories.—In what state, or territory, do you live? What are its natural boundaries? What land, if any, adjoins it on the north?—on the east?—on the south?—on the west? In what directions do the rivers flow through your state? Into what do they flow? Does its surface consist of highlands, or lowlands, or of both? In which part is its highest land?

Which is the largest state in the Union?—the smallest?—the most central? Through what state and territories do the Rocky Mountains extend?

In what state does the Mississippi River rise? What states on its west bank?—on its east bank? In what territories are the sources of the Missouri?

Through what state and territories does the Great Divide of the Rocky Mountains extend? Where is the divide between the Arctic Ocean and the Gulf of Mexico?

Climate and Products.—What is the mean annual temperature of your state? (*See brown isotherms, also degrees Fahr., in the inner margin.*) Mention the coldest

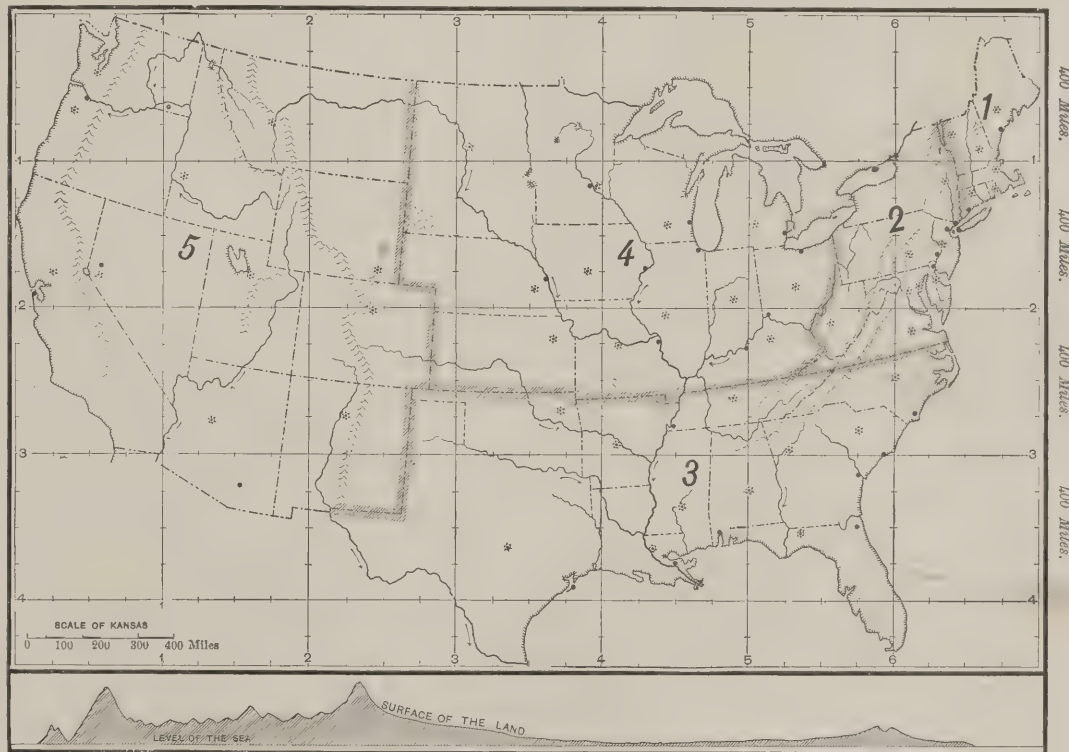
states and territories,—the warmest. What is the mean annual temperature of Central Florida?—of Central Texas?—of Southern Kansas?—of Northern Maine?

What depth of snow, if any, falls in your state? Which part is the coldest in winter? In what months do flowers bloom in the open air? In what season is there the most rain?—the least rain? What are the principal products of the highland region of the United States?—of the northern and central part?—of the southern?—of the eastern?

Cities.—Mention six large cities on the Atlantic Coast, beginning at the north—(*Mention those only which are printed in heavy, black letters*),—three on the Gulf Coast,—one on the Pacific Coast,—two on Lake Michigan,—two on Lake Erie,—two on the west bank of the Mississippi River,—four on its east bank. What is the capital of your state? What is the largest city in your state? What is the capital of the United States?

Commercial Geography.—In what part of your state do you live? In what direction from you is its capital? Point toward it. How can you reach it? On what water, if any, can you sail to it? How would you reach the metropolis of your state? Point toward the City of Washington. In what direction is it from you? What states and territories, if any, would you cross in going to it by railroad? What large cities would you pass through on your way? On what waters, if any, can you sail to it? How far are you from the Atlantic Coast?—from the Pacific coast?—from the Gulf Coast? On what waters can you sail from St. Louis to New York?—to Cincinnati? How many railroads extend across the territories to the Pacific Coast?

OUTLINE MAP OF THE UNITED STATES.



Map Drawing.—To draw a map of the United States, use, as a common measure, a line representing the length of the State of Kansas, through its center,—400 miles. For papers, this measure may be one or two inches in length; for the blackboard, five or six inches. Proceed in the following order:—

1. **Construct an oblong**, seven measures in length, by four and a half in width, dividing it into squares, and subdividing the side of each square into fourths, or distances representing 100 miles each. When the map is completed in ink, the construction lines, drawn lightly with the pencil, may be erased.

2. **Begin** at the north-west corner, and draw the northern, eastern, southern, and western boundaries, according to the construction squares and their points of division. Draw the mountains, lakes, and rivers, and locate the capes, bays, etc., marking the name of each.

3. **Mark the boundaries** of the five great divisions, or sections of the United States;—1, New England States; 2, Middle Atlantic States; 3, Southern States; 4, North Central States; 5, Pacific States and Highland Division. These boundaries are shown on the maps above, by broad, shaded lines.

4. **Draw the boundaries of your own state (or territory)**; then, those of all the states and territories north, east, south, and west, marking their names, and locating the capital and largest city of each.

5. **A profile, or section, across the middle of the United States** may be drawn from the shaded diagram below the map. This shows the comparative elevation of the mountains, plateaus, plains, slopes, and valleys above the level of the sea. The names of these may be marked, as on the following page.



WHEN NOON

6 A.M.



7 A.M.

AT LONDON.

CENTRAL or 90th MERIDIAN TIME

EASTERN or 75th MERIDIAN TIME

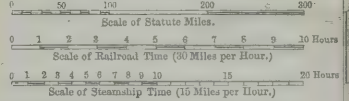


THE UNITED STATES.

Comparative Area.

Scale, as 1:11,658,000
or 184 Miles to the Inch.

10,000
Square
Miles.



- LARGEST LETTERS** indicate Largest City in each State.
Red Numbers (1880) " STATE CAPITAL.
" " Population in Thousands, (Census 1880).
Red Stars (*) " Center of Population in each decade.
" " Railroads, divided into hour Steamship Routes Distances.
" " Standard Time Divisions.
" " Isothermal Lines.
" " Head of Navigation.
" " Course of Rivers.

COMPARATIVE TEMPERATURE
COMPARATIVE LATITUDE AND TEMPERATURE

THE UNITED STATES.

1. **The Republic, called the United States**, is the middle division of North America, and is situated in the southern part of the North Temperate Zone.¹

2. *It extends* from the Atlantic Ocean, on the east, to the Pacific Ocean, on the west; and from the Dominion of Canada, on the north, to the Republic of Mexico and the Gulf of Mexico, on the south.²

3. *The high mountains and plateaus* of the United States are in the western part. There the mining of gold and silver, and the raising of cattle and sheep, constitute the leading occupations of the people.

4. *The plains, prairies, slopes, and lowlands*, extending from the great highland region, eastward to the Atlantic Ocean, are remarkable for their fertile soil, which produces immense crops of grain, cotton, fruits, and vegetables.

5. *The valleys of the Pacific Slope* are noted for their mild, genial climate, and their great yield of wheat, fruits, and vegetables.

6. *Coal and iron* are mined extensively in various parts of the United States, especially in the region of the Appalachian Mountains.

7. *The variety and importance of the products and industries* of this country are due, principally, to its vast extent of territory and its great diversity of soil, elevation, and climate.

8. *Its increase in population, wealth, and power* is unsurpassed. A century ago, there were but thirteen states,³

containing less than 4,000,000 inhabitants. Now, there are thirty-eight states, ten territories,⁴ and the District of Columbia, with a total population of more than 50,000,000.

9. *The first colonies* in the region now called the United States were established by the English, in Virginia, in 1607; by the Dutch, in New York, in 1613; and by the Pilgrims, in Massachusetts, in 1620.

10. *All were subject to Great Britain* from 1664 to 1776, when the thirteen colonies declared themselves free and independent states.

11. *Each state* has its own constitution, laws, legislature, and governor, while all the states are united under the constitution and laws of the United States.⁵

12. *The General Government* comprises three departments; the legislative, the judicial, and the executive. It has control of all matters pertaining to commerce and treaties with foreign countries, the army and navy, the declaration of war, the post-offices, and the coining of money.

13. *The legislative power* is vested in Congress, which consists of the Senate⁶ and House of Representatives.⁷ Congress holds its sessions in Washington.⁸

14. *The judicial power* is vested in the Supreme Court,⁹ which interprets the laws.

15. *The executive power* is vested in the President, whose duty is to execute, or enforce, the laws. He is elected for four years.¹⁰

1. **Alaska**, a territory occupying the north-western part of North America, is partly in the North Temperate Zone, and partly in the North Frigid Zone. It was purchased from Russia, by the United States.

2. **The distance across the United States**, from east to west, through the center, is about 2,600 miles; and from north to south, about 1,600 miles. **The shortest distance** between the Dominion of Canada and the Gulf of Mexico is about 800 miles.

Standard Time.—The United States, exclusive of Alaska, extends over fifty-eight degrees of longitude. If there were fifty-eight railroad stations on a line extending westward from the Atlantic to the Pacific Coast, and exactly one degree of longitude apart, whose clocks showed the local, or meridian time of each place, there would not be two clocks alike, in time. Each clock would be four minutes faster than the one west of it. If you should travel west, stopping at each of those stations, and wished your watch to show the correct time, you would turn its hands backward, four minutes, at each station. These frequent changes caused great confusion to persons traveling east or west. For convenience, the leading railroad companies have established four time-divisions for the United States, setting their clocks one hour apart, according to the hour meridians. (*See clocks on page 28 and note on page 29.*) For a considerable distance east and west of each of these hour meridians, and extending to leading railroad centers, the clocks are set alike. The time shown by them is called *Standard Time*. All the clocks in a certain time-division differ from those in the adjoining division, by one hour, precisely. (*See pages 34 and 35.*) **The Eastern Time Division** includes nearly all the Atlantic States from Maine to Georgia; the **Central Division**, nearly all the states in the Mississippi Basin, Gulf Slope, and Lake Region; the **Mountain Division**, Colorado and nearly all the territories; and the **Pacific Division**, the Pacific Coast Region. **These four divisions are separated** from one another by irregular red lines shown on the map; and it is at these, that travelers change the time of their watches one hour,—backward, if traveling west; forward, if traveling east.

3. **The original thirteen states** were New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, and Georgia. **The first states admitted after them** were Kentucky, Vermont, Tennessee, Ohio, Louisiana, Indiana, and Mississippi.

4. **A territory** is under the control of the General Government of the United States, until it is admitted into the Union, as a state, by Congress.

5. **A state** is entitled to be represented in the United States Senate by two senators; and in the House of Representatives, by one member for every 154,325 inhabitants. Every state is entitled to, at least, one member. A territory may send a delegate to the House, but he has no vote. There are, at present, 76 senators and 325 members of the House of Representatives. The states which have the largest representation in the House are New York, thirty-four members; Pennsylvania, twenty-eight; Ohio, twenty-one; and Illinois, twenty. **The states and territories** of the United States have legislatures consisting of two houses similar to those of Congress, elected by the people. **They are divided** into counties, which are, in some cases, subdivided into townships. The divisions of Louisiana corresponding to counties, are called parishes. **The highest officials** in a state are the Governor, Lieutenant-Governor, Secretary of State, Attorney-General, and Superintendent of Schools. **Towns and villages** are collections of houses and inhabitants. Cities have certain rights and privileges not possessed by towns and villages. The affairs of a city are usually controlled by its Mayor and Aldermen. **A county seat** is the chief town, in which the official business of the county is conducted.

6. **The Senate of the United States** is composed of two senators from each state, chosen by the state legislature, for six years. The Vice-President of the United States is the president of the Senate.

7. **Representatives** are elected by the people, for two years.

8. **The session of Congress** begins on the first Monday in December, of each year. A law can not take effect unless passed by both the Senate and the House of Representatives, and approved by the President. If, however, he disapprove a measure which has been passed by both houses of Congress, it may become a law on being repassed by two thirds of each house.

9. **The Supreme Court** consists of a chief-justice and eight associate justices, all appointed, for life, by the President, with the consent of the Senate.

10. **The President and Vice-President** are elected by a number of electors, called the Electoral College, chosen by the people of the states, or their legislatures. Each state is entitled to a number of electors, equal to the whole number of senators and representatives to which it is entitled in Congress. In case of a vacancy in the office of President, it shall be filled by the Vice-President. If there be no Vice-President, the law of 1886 vests the succession in those members of the Cabinet who are constitutionally eligible, in the following order:—Secretary of State, Secretary of the Treasury, Secretary of War, Attorney-General, Postmaster-General, Secretary of the Navy, and Secretary of the Interior.

MAP DRAWING ON A UNIFORM SCALE,

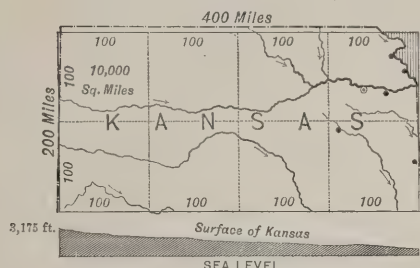
COMBINED WITH COMPARATIVE AREA.

1. This easy method of map drawing is based on the principles of association, comparison, and uniformity.

2. It employs a common measure for states, countries, and continents. This is a rectangular frame, representing the State of Kansas, which is about 400 miles in length, and 200 miles in width.¹

3. The common measure, or construction frame, is divided into eight squares, each side of which represents the distance of 100 miles.

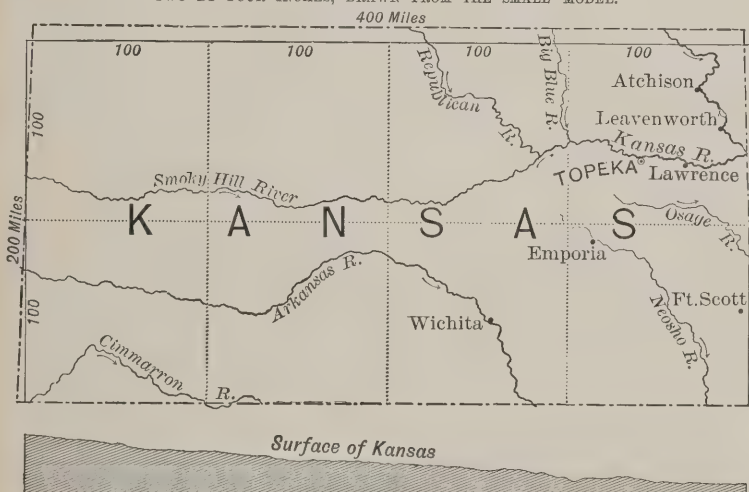
MODEL, OR COMMON MEASURE,
ONE INCH BY TWO INCHES.



4. To draw a map the size of the small model, construct a frame one inch in width, by two inches in length, and divide it into eight equal squares, by light, or dotted, guide lines.

5. Mark the boundaries of the state;—the northern,—eastern,—southern,—and western;—then the mountains, if any, with their names.

MODEL ON AN ENLARGED SCALE,
TWO BY FOUR INCHES, DRAWN FROM THE SMALL MODEL.



6. Draw the principal rivers, beginning at their sources, or at the parts shown on the model nearest their sources, and mark their courses by small arrows. Observe the parts of the guide lines which are crossed by the rivers. Write, or print, the names of the rivers.

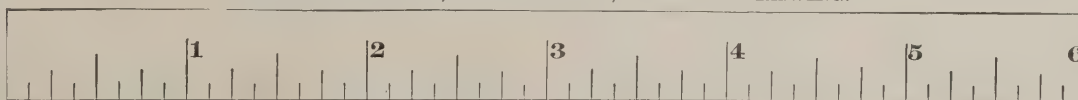
1. These distances—200 by 400 miles—aid the pupil in remembering all other distances with which they are compared throughout this book.

2. The shaded profile represents a straight section across the state, from east to west. High peaks in other parts of the state appear in outline.

3. The height of the western part of Kansas above the sea-level, is a little more than 3,000 feet; of the eastern part, about 1,000 feet. The surface, therefore, slopes toward the east, or south-east.

4. A scale may be made by the pupils, from a slip of paper, or card-board, like that at the foot of this

SCALE OF INCHES, OR MEASURES, FOR MAP DRAWING.



7. Mark the capital, and two or more of the other important cities, with their names.

8. A profile (prō'fil), or sectional diagram, showing the slopes of the surface of the state, may be constructed under the map, by drawing, first, a straight line to represent the level of the sea; then, at the proper distances above it, the profile of the mountains, plains, slopes, and valleys.²

9. The height of every thousand feet is indicated on the profile by a small mark, or dot.³

10. The length of the profile should be the same as that of the drawing.

11. To draw a map on an enlarged scale, make the construction frame of the desired size, dividing it into eight equal squares, and proceed as directed.⁴

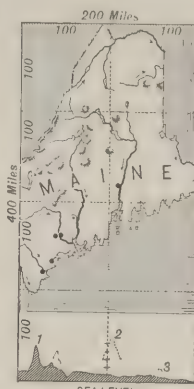
12. A convenient size for papers, or slates, is two by four inches; for the blackboard, two by four feet. Here, every line is just twice the length of that in the small model. Locate the mountains, rivers, cities, etc., in the squares and parts of squares, corresponding to those in the small model.

13. An enlarged map of Maine may, in like manner, be drawn from the small model of that state, shown above.⁵

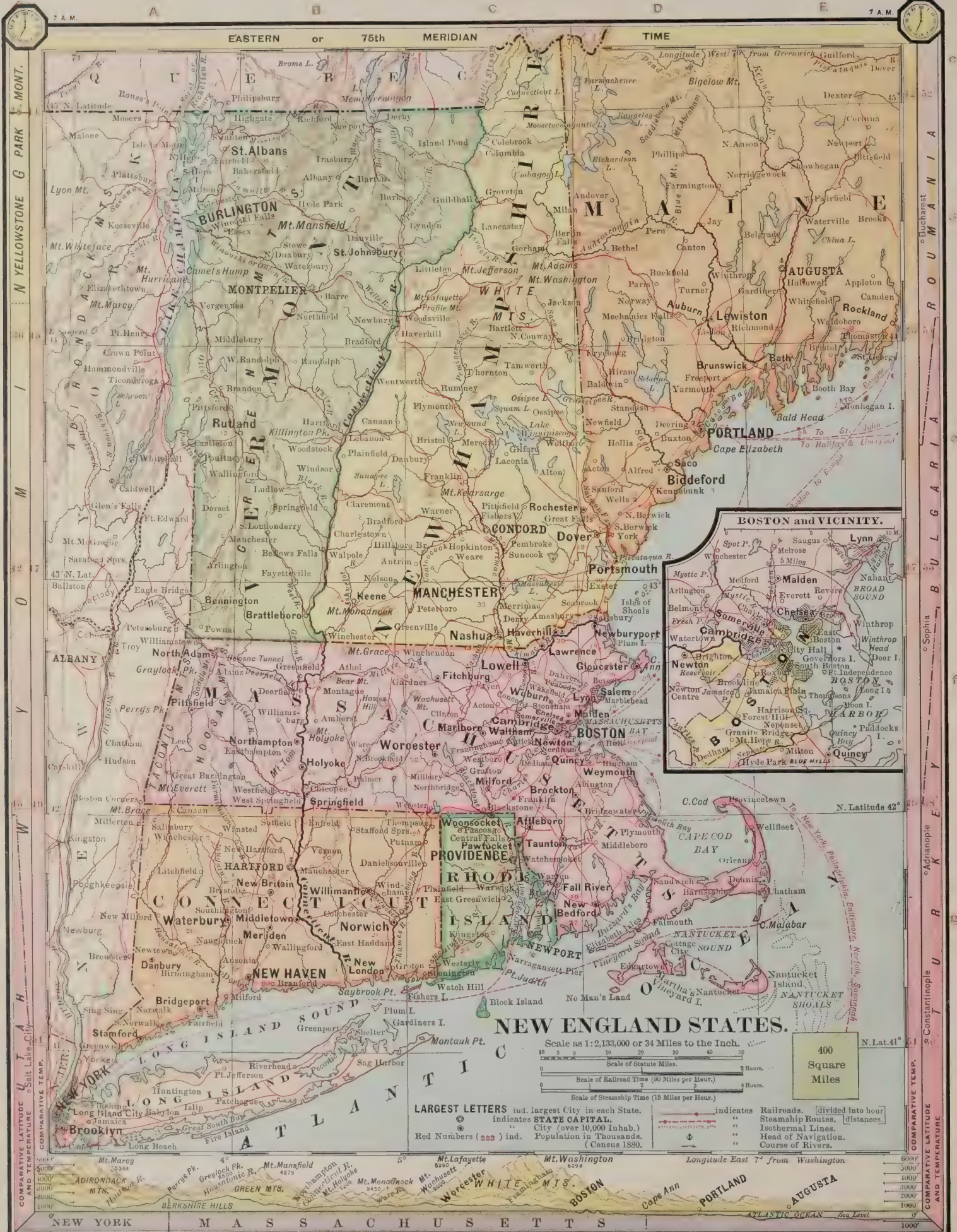
Order for Drawing.—Construction frame, divided into eight equal squares,—boundaries,—mountains,—lakes,—rivers,—capes,—islands,—bays,—capital,—other important cities,—profile.

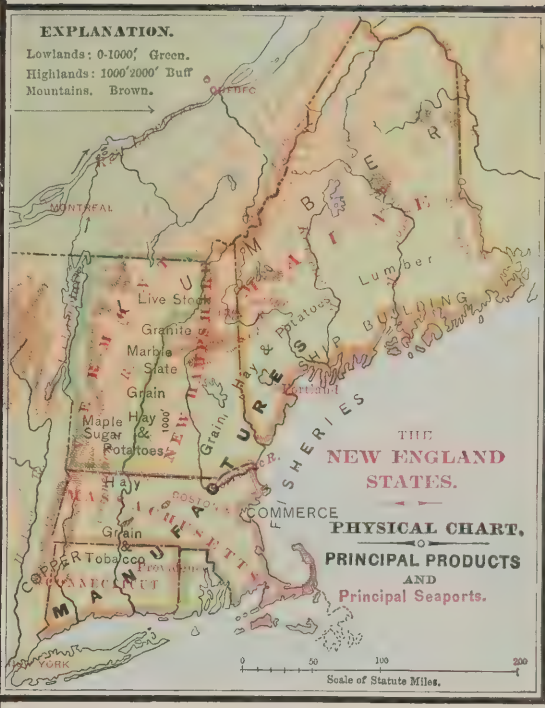
page. This will aid them in drawing larger maps. A larger map of one's own state may be drawn, simply, by making the construction frame three to six inches in width, and twice that in length. Divide the frame into eight equal squares.

5. Those states, territories, etc., which are larger than Kansas may be drawn by placing two or more construction frames together. Outside the boundaries, the vertical shading indicates adjacent land; the horizontal shading, water; the dotted shading, waters which belong to the state, or territory. The details of a map may be drawn with greater accuracy by subdividing these squares,



COMPARATIVE TIME (STANDARD) WHEN NOON AT LONDON.





MAINE.

What rivers form parts of the boundary of Maine?

In what directions does the surface slope? Mention its highest mountains,—three large lakes. What rivers are their outlets?

Where is Bangor?—Augusta?—Lewiston?—Bath?—Portland?—Biddeford? Which is the capital?—the largest city?

NEW HAMPSHIRE.

What group of mountains in this state? Which is the highest?—(See sectional view at foot of map.) Which is the largest lake in the state? What is its outlet? What rivers form parts of the boundary?

What is the capital? In what part of the state are its largest cities? Where is Concord?—Dover?—Portsmouth?—Manchester?—Nashua?

VERMONT.

What are its water boundaries? From what state does the Connecticut River separate it? What mountains in this state? Where is Mt. Mansfield? To what are the rivers tributary? Mention the capital. Where is Burlington?—Rutland?—Bennington?—Brattleboro?

THE NEW ENGLAND STATES.

GENERAL QUESTIONS.

Location.—In what part of the United States are these states? What natural boundaries have they? What British province is north?—east? What state west? Between what parallels of latitude are they?

Outline, etc.—Mention three large bays,—three islands,—a peninsula,—the principal capes. Which is the largest state?—the smallest?

Surface.—In what directions do the mountains extend? In what directions do the rivers flow? Which is the principal river? Where is its source?—its mouth? Mention the largest lakes.

Climate and Productions.—What is the mean temperature of the southern part of Connecticut (*kön nöl' cüt*)?—the northern part of Maine? What minerals are found in these states? Where is the lumber region?

Cities.—Which is the principal city of these states? Mention the largest city in each. Which is the most eastern city of the United States?

Commercial Geography.—Mention the principal sea-ports. Through what cities would you pass in going from Boston to Portland?—from Boston to New York? In what time division are these states?

MASSACHUSETTS.

What water east of Massachusetts? What bays indent its shores? What islands belong to Massachusetts?

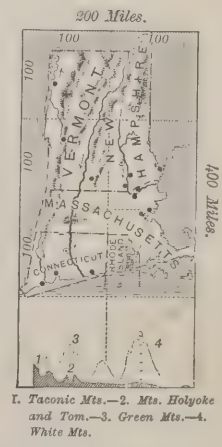
What mountains on the western boundary? What river crosses the state? What river flows through the north-eastern part of the state?

Mention three cities on the Merrimac River. Where are Lowell, Lynn, Cambridge?—Boston?—Springfield? Which is the capital?

CONNECTICUT AND RHODE ISLAND.

Mention their water boundaries. Into what do the rivers flow? Mention three. Which are the capitals? Where is Providence?—Hartford?—Newport?—New Haven?—Bridgeport?

Map Drawing.—Draw a map of New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island, as directed on page 87.





THE NEW ENGLAND STATES.

1. **Position.**—The New England States are situated in the north-eastern part of the United States. They are in the same latitude as Montana (mōn tā'na) and Wyoming (wī ō'ming). (*See margins of maps.*) Their area is about three fourths that of the State of Kansas.

2. **Surface.**—The surface is, generally, rugged, the western part being traversed* by irregular ranges of the Appalachian Mountains which terminate in isolated hills in the northern part. The White Mountains contain the highest peaks,¹ while the Green Mountains constitute the longest chain.² The highest land in New England is Mt. Washington. The Atlantic Plain is a strip of land between fifty and eighty miles in width, bordering on the coast. The coast is irregular, high, and rocky, and is lined with islands, inclosing fine harbors.³

1. The **White Mountains** form a group of barren peaks which are covered with snow most of the year. Some of the peaks are named for presidents of the United States. Another is named for Lafayette, a distinguished Frenchman. Another is named for Benjamin Franklin. Each of these peaks is more than a mile above the level of the sea.

3. **Lakes.**—The surface is dotted with beautiful lakes, the principal of which are Moosehead, Sebago (sē bā'gō), and Range'ley Lakes, in Maine; Winnipiseogee (sā'kē), in New Hampshire; and Lake Champlain (shām plān'), which is situated between Vermont and New York.

4. **Rivers.**—Most of the rivers are short and swift, due to the nearness of the mountains to the sea. They furnish an abundance of water-power. The Connecticut, the largest river in this section, is noted for the beauty and fertility* of its valley. The Merrimac River, in New

2. The ranges in **Massachusetts** are the Tā cōn'ic (or Ta ghan'ic) and Hoosic.

3. The coast, if measured in a straight line, is scarcely 700 miles long; but if measured along its indentations, it exceeds 2,500 miles in length. These indentations furnish many excellent harbors.

* trāv'ersed, crossed.

fer tīl'ity, fruitfulness, productiveness.

Hampshire, furnishes more water-power than any other river in the world.

5. **Soil.**—The soil of the river-valleys is well cultivated, but elsewhere it is better adapted to grazing.

6. **Climate.**—The winters in the interior are long and severe, but healthful. Near the coast, they are alternately cold and mild. Here fogs are frequent. The summers are short and often very warm. In the interior, the prevailing winds are land-winds, which are dry; but on the coast, they are east, or sea-winds, which are moist.⁴

7. **Vegetation.**—The northern part of this section is covered with dense forests of pine. Throughout the whole region, spruce, hemlock, hickory, sugar-maple,⁵ oak, chestnut,⁶ elm, and birch trees are abundant.

8. **Edible wild fruits** thrive every-where. The huckleberry,* blackberry, and winter-green are the most valuable. Wild grasses are also abundant.

9. **Animals.**—The largest wild animals are the moose, caribou,* and black bear. The two former are now found only in the forests of Maine and Canada. The wolf, catamount,* badger, raccoon, beaver, and other animals valued for their fur were formerly common. The river and coast waters abound in fish.

10. **Minerals.**—Granite, marble, slate, porcelain-clay,* soap-stone, and sandstone abound throughout these states, and are extensively quarried. Iron, coal, gold, silver, and zinc are mined in a few localities.

11. **Industries.**—Probably no other part of the world can boast of so great a variety of industries as the New England States.

12. **Agriculture** is confined chiefly to dairying,* and the production of fruit and garden vegetables. In many localities, the raising of stock is an important source of profit. Some attention is given to grain farming, but most of the breadstuffs* consumed are brought from the Mississippi Valley.

13. **Manufacturing** is the industry to which the natural resources of the country and the extraordinary* intelligence of the people are best adapted. The various manufactures represent every stage of the conversion* of raw* material into finished articles. More than one

half of the cotton and woolen goods made in the United States is produced in this section.

14. **Commerce**, both domestic* and foreign,* is a result of the vast manufacturing industries. Thousands of vessels are engaged in importing raw materials and exporting manufactured articles. There is direct railway connection with all parts of the United States, Canada, and the principal cities of Mexico.

15. **The fisheries**, likewise, form an important source of wealth. Immense quantities of cod, mackerel, and herring are cured, packed, and distributed throughout the United States.⁷ During many years, the whale-fisheries of this section were very important, surpassing all the others of the world in the value of their products.⁸

16. **People.**—The people of the New England States are noted for their education, refinement, and happy home-life. Many are descendants of early settlers who came from England. Every state has schools, academies, and colleges. Public libraries are found in all the important towns. People have emigrated from this section, and, in large numbers, settled in distant states and territories, where they have been very active in establishing schools, business enterprises, etc.

17. **Maine**, the Pine-Tree State, is the largest New England State and the most easterly of the United States. In size, it is about equal to the area of the five other states of this section.

18. **The bold, rocky coast** contains a large number of excellent harbors. The lakes and bays of Maine cover nearly one tenth of its area. The northern portion is covered with dense forests of pine. Its highest land is Mt. Katahdin (ka tā' din).

19. **The principal industries** are manufacturing, lumbering,⁹ stock-raising, and ship-building. Cod and mackerel fisheries are carried on extensively along the coast. The cutting and shipment of ice is also an important industry on the lakes and rivers.

20. **Augusta**, the capital, is at the head of navigation on the Ken ne bec' River.

21. **Portland**, the metropolis, has an extensive foreign and inland commerce. During the winter, it is a terminus* of the Canadian transatlantic steamship lines. (*For other important cities, see note 10.*)

4. **The temperature** in winter frequently sinks to -40° F. (forty degrees below zero). In 1884-'5, the Signal Service Observatory on Mt. Washington, recorded a temperature of -50° F., and a wind velocity of 120 miles an hour.

5. **The sugar-maple** is valuable for the sugar contained in its sap. The latter is obtained by tapping the tree early in the spring. The sap is boiled down to a thick sirup, then clarified and crystallized. The **gum** exuding from the spruce-tree is collected and made into chewing-gum.

6. **The chestnut** is valuable, mainly, for its timber, which is used as an ornamental cabinet wood. The **oak** of New England, on account of its strength, is superior to that found elsewhere. It is used, chiefly, for carriage building.

7. **Cod-fish** are cured by packing dry, in salt. **Mackerel** are usually preserved in salt. **Herring** are either smoked, or packed in oil. **Sardines** (sār' deens), also, are caught off the coast of Maine. **Men hā'den**, or moss-bunkers, furnish oil, and are also used to fertilize the soil. **Salmon**, **pickrel**, and **trout** are numerous in the streams.

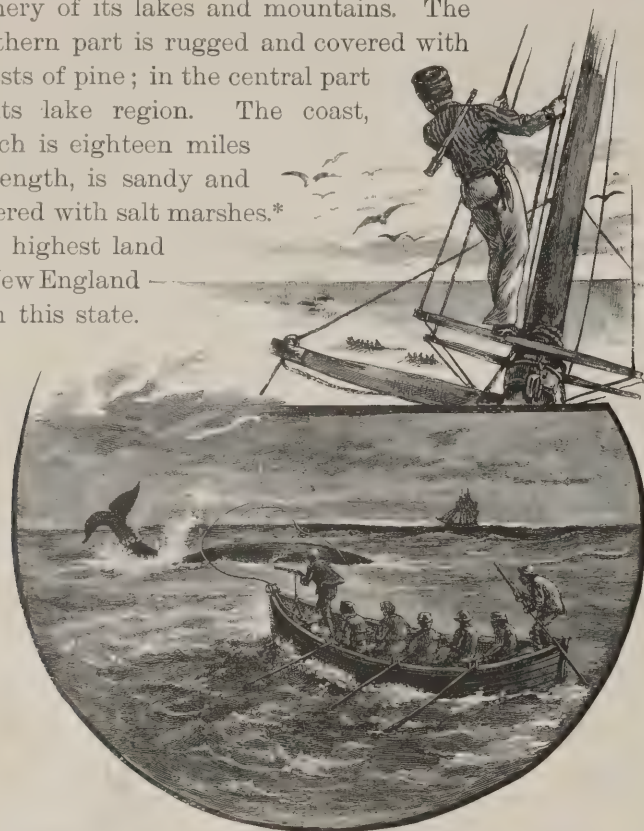
Cod-fisheries are carried on along the coast of Newfoundland.

8. **Whale-fishing** declined in importance after the introduction of kerosene (ker' o sēn), or coal-oil. Within a few years, there has been a marked revival of this industry. The steam whaler has taken the place of the sailing vessel; and the bomb lance, which is shot from a small cannon on shipboard, has supplanted the harpoon.

9. **The trees** are cut in winter, dragged by teams over the snow to the streams, which, when the ice melts in the spring, float the logs down to the mills.

* *hūck'le bē' ry*, whor'le berry. *ex traor' dī na ry*, uncommon; rare.
moose and *cār' i bou*, animals of the deer kind. *con vē' sion*, changing; turning.
pōr' ce lain, a fine kind of earthen ware. *raw*, unprepared; unfinished.
bread' stuffs, bread-corn; meal; flour. *fōr' eign* (for' in), not of one's country.
domēs'tic, pertaining to one's home or country. *tēr' mī nūs*, end; boundary.
cat' a mount, an animal of the cat kind, known also as the panther, puma, and cou' gar.
dā' ry ing, the business of making butter and cheese, and of supplying milk.

22. **New Hampshire**, the 'Granite State, is often called the Switzerland of America, on account of the beautiful scenery of its lakes and mountains. The northern part is rugged and covered with forests of pine; in the central part is its lake region. The coast, which is eighteen miles in length, is sandy and covered with salt marshes.* The highest land in New England — is in this state.



CAPTURING A WHALE BY MEANS OF A BOMB LANCE SHOT FROM A CANNON.

23. *The leading industry* is manufacturing. The state ranks among the first in the manufacture of cotton and woolen goods. Carriage timber is exported to all parts of the states. Agriculture is confined chiefly to the production of hay and garden vegetables. New Hampshire contains extensive quarries of granite and mica.*

24. *Concord* (kɒŋk'urd), the capital, is celebrated for the manufacture of wagons and stage-coaches.

25. *Man'chester*, the largest city, is noted for the

manufacture of cotton goods and for the building of steam fire-engines.¹¹

26. **Vermont**, the Green Mountain State, received its name from the mountains which extend through it from north to south. It is the only New England State having no sea-coast. Its highest land is Mt. Mansfield.

27. *The industries* are the raising of stock, dairying, and wool-growing. In the production of maple sugar, it excels every other state in the Union.

28. *Montpelier* (mɒnt pē'li ɛr) is the capital.

29. *Burlington*, the principal city, is a commercial center. Its commerce with Canada, by way of Lake Champlain, is important.¹²

30. **Massachusetts**, the Bay State, is the wealthiest state of this section, and, after Rhode Island, the most populous. The western part is rugged and crossed by low ranges of mountains. The state is celebrated for its number of lakes. Its highest land is Graylock Peak.

31. In proportion to its population, Massachusetts is the foremost state in the value and extent of its manufactures. It excels every other state in the Union in the value of its cotton and woolen manufactures, and of its fisheries. More than one half the boots and shoes used in this country are made here. In commercial interests, Massachusetts is second only to New York.

32. *Boston*, the capital, is famous for its commerce, its schools, and its institutions for the study of literature, science, and art.* It is the largest boot, shoe, and leather market in the world. Its suburbs, and its park, called the Common, are remarkable for their beauty.

33. *Lowell* (lɔ'el) is one of the most important manufacturing cities in the Union. Its cotton-mills contain more than one million spindles.

34. *Worcester* (wɔ'stər) is noted for its manufactures and its excellent institutions of learning.¹³

10. **Other important Cities.**—IN MAINE,—*Lewiston* contains cotton and other factories. *Ban'gor* is a manufacturing city. Next to Chicago, it is the largest lumber market in the world. *Bath* is noted for ship-building.

11. IN NEW HAMPSHIRE,—*Nash'u a* is a railway and manufacturing center. *Dover* contains extensive cotton and woolen factories. *Portsmouth* (pɔrts' muth) is the only sea-port in the state.

12. IN VERMONT,—*Rutland* is the most populous town in the state. It is a railway and manufacturing center. *St. Albans* (sant al'banz) is the center of a fine agricultural region. There are but two incorporated cities in the state, *Burlington* and *Vergennes* (vɛr'jɛnz').

13. IN MASSACHUSETTS,—*Cam'bridge* is one of the oldest cities in the state, having been settled in 1630. It is the seat of Harvard University. *Fall River*, near the head of Narragansett Bay, is the foremost city in the United States in the extent of its cotton manufactures. *Lawrence* and *Lynn* are noted for cotton manufactures. *Springfield* is the seat of the United States Arsenal. *Salem* is a sea-port, and next to Plymouth, the oldest town in the state. *New Bedford* has long been an important whaling-port.

14. IN CONNECTICUT,—*Bridgeport* is a sea-port on Long Island Sound. *Nôr'wich* has an extensive trade with the West Indies. *Waterbury* contains the largest brass foundries in the United States.

15. IN RHODE ISLAND,—*Pawtucket* and *Woonsocket* (wɔon sɔk'et) are both engaged in manufactures.

16. **Celebrated summer resorts.**—Newport, the White Mountains, Lake Winnipiseogee and other lakes, Berkshire Hills, Mt. Desert, Rye Beach, Nantucket, Martha's Vineyard, and the Isles of Shoals. Nearly every town, village, and lake in New England attracts summer visitors.

17. **Distinguished Men.**—Born in *Maine*, Henry Wadsworth Longfellow, poet; in *New Hampshire*, Daniel Webster and Horace Greeley, statesmen; Franklin Pierce, president; John Stark, soldier; and Joseph E. Worcester, author of dictionary; in *Vermont*, John G. Saxe, poet; Chester A. Arthur, president; and Stephen A. Douglas, statesman; in *Massachusetts*, John Adams and John Quincy Adams, presidents; Benjamin Franklin, statesman; Ralph Waldo Emerson, William Cullen Bryant, Nathaniel Hawthorne, James Russell Lowell, Oliver Wendell Holmes, and John Greenleaf Whittier, poets and prose writers; George Bancroft, William H. Prescott, and John Lothrop Motley, historians; and Charles Sumner, statesman; in *Connecticut*, Noah Webster, author of dictionary; and Fitz-Greene Halleck, poet.

18. **Historical Notes.**—Captain John Smith visited the coast of Massachusetts in 1614, and named the region New England. Plymouth was settled by the Pilgrims, a people celebrated for their intelligence, courage, and purity of character. Salem was founded by Puritans, who formed the Massachusetts Bay Colony. In 1630, John Winthrop, with 1,500 followers, founded Boston, Cambridge, and other settlements near the coast.

19. *The Pilgrims* landed at Plymouth on the 21st of December, 1620, and there made the first English colony in New England. In Pilgrim Hall may be seen many relics of the first settlers.

20. *The coast of Maine* had been explored by Bartholomew Gosnold before the Pilgrims came to Massachusetts, and small settlements of fishermen were made. Settlements were made in New Hampshire soon after the landing of the Pilgrims, and Governor Wentworth claimed the territory as far west as Lake Champlain.

* *marsh*, a tract of land usually covered with water; a swamp.

mī'ca, clear, glass-like mineral.

sɔ'ence, complete knowledge.

lī'er a tūre, writings of good authors.

ārt, the application of knowledge.

35. Connecticut has an undulating* surface. The valleys of the Connecticut, the Thames (thāmz), and Housatonic (hōō sa tōn'ic) rivers are broad and fertile.

36. The state is noted for the manufacture of cotton and woolen goods. Nearly all the clocks used in this country are made here. Hardware, cutlery, rubber and silk goods, plated ware, and sewing-machines, are among its numerous and important manufactures.

37. Hartford, on the Connecticut River, is the capital.

38. New Haven, the largest city, is the chief sea-port, and the commercial center of the state. Yale College,* in this city, is one of the oldest and largest universities* in the Union. (For other important cities, see note 14.)

39. Rhode Island is the smallest and most densely populated state in the Union. Its most important industry is the manufacture of cotton and woolen goods.

40. The Legislature meets at Newport in the spring, and at Providence in the winter.

41. Providence, one of the capitals of Rhode Island, is a manufacturing city and sea-port.

42. Newport, the other capital, is a famous watering-place* and summer resort. (For other cities, see note 15.)

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about the New England States, as a group, mentioning the following topics; or, if the teacher prefer, the letter may be written about any of these states.

POSITION,—Latitude of most northern and most southern points—longitude of most eastern and most western points—situation as part of the United States, and as compared with distant countries and states.

SIZE,—Extent from north to south and from east to west, in miles and railroad time (use scales).

SOIL,—Where adapted to agriculture and to grazing.

CLIMATE,—Where moist—dry—cold—and healthful.

PRODUCTS,—Agricultural—manufactured—mineral—and marine.

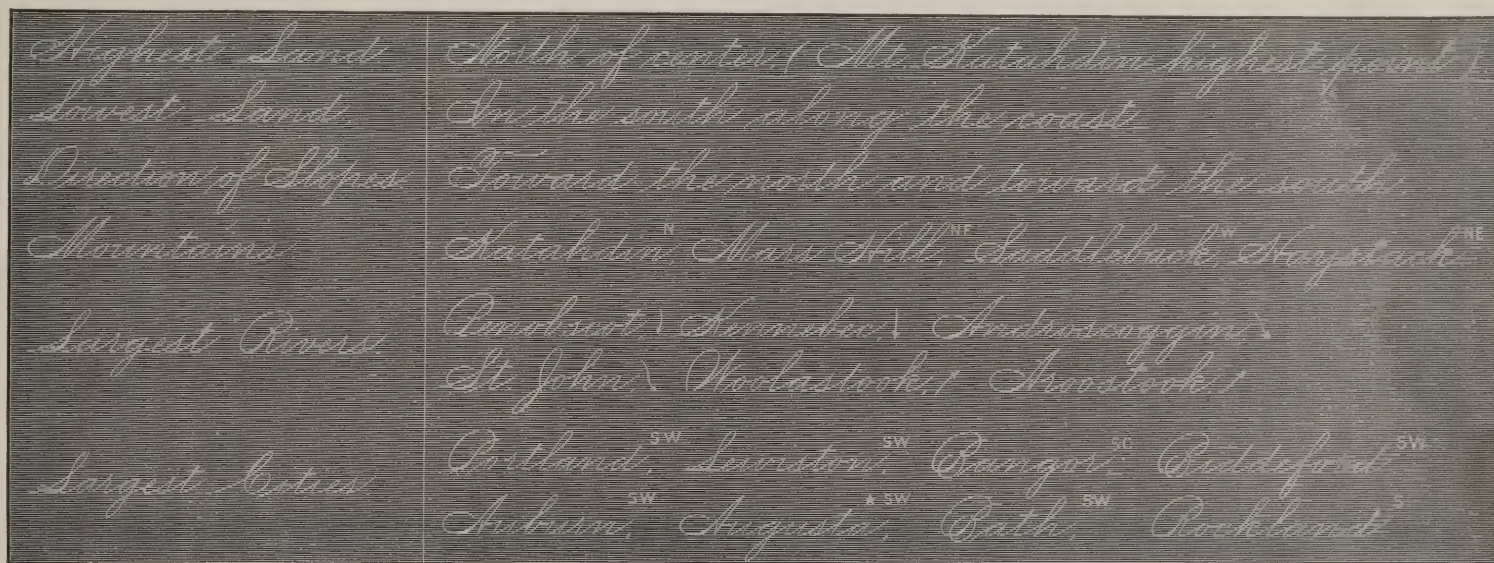
INDUSTRIES,—Describe the principal industries.

NATURAL SCENERY,—Mountains—lakes—and health resorts.

HISTORY,—When and by whom settled—principal leading events.

DISTINGUISHED PERSONS,—Statesmen—presidents—soldiers—inventors, etc.

A MODEL FOR TOPICAL DIAGRAMMS, OR WRITTEN EXERCISES, ON THE STATES.—MAINE.



The arrows show the direction in which the rivers flow. S. = South; S. W. = South-west, etc.

21. The history of the English colonists, in their relations with the Indians, was, from the very first, marked by fighting and bloodshed. The colonists did not know how to treat them in a manner to make them friendly. They could not see that it was impossible for an Indian to understand the laws which govern people living in civilized countries. The Indians, too, saw with alarm, that they could no longer live by hunting where the colonists had made their homes. Therefore, both races of people began to be more and more hostile to each other. Whole settlements of colonists were massacred by Indians, and bands of Indians were butchered, in retaliation. Finally, Philip, an Indian chief of great courage and ability, succeeded in uniting several tribes for the purpose of exterminating the English. A savage war followed, in which the Indians were defeated. Philip was hunted down by the settlers, and finally shot by one of his treacherous followers. This war ended the Indian troubles in the New England colonies.

22. New Hampshire was originally a tract of land granted to Ferdinand Gorges and Captain John Mason. Settlements were made at Portsmouth and Dover, in 1623. Subsequently, it became a royal province and so continued until the Revolution. New Hampshire was the first colony to declare her independence.

23. Before the landing of the Pilgrims and Puritans, the Dutch had settled New York and explored the coast of Long Island Sound, which they claimed as their territory. Soon, however, explorers from Plymouth selected a place on the Connecticut River (which means long river) for a trading-post, and, in 1633, parties traveled west from the Massachusetts Colony and settled at Windsor (win' zer), near where the Dutch had founded Hartford. The following two years brought a great

many people from Massachusetts to settle in the fertile fields along the river banks, and so a new state was formed. These people were more liberal in their views than the other Puritans, and they lived more peaceably.

24. Most of the earlier colonies had charters or written agreements with the King of England, by which they held the lands they had settled. Under these charters, the people were allowed to make their own laws and to govern themselves as they pleased. Charles I. had given the colonies great liberty in this respect, but James II. was a different kind of king. He would not permit any government that he, himself, did not control. So James ordered the colonists to give up their charters, and sent a despicable tyrant, named Andros, to govern them. The Council of Connecticut met one evening at Hartford to deliver the charter to Andros, for he had demanded it. A long and exciting debate ensued. Suddenly the lights went out, and when they were again lighted, the charter had disappeared. A plucky member had carried it off and hidden it, so the story goes, in an oak-tree. As long as the tree stood, it bore the name of the Charter Oak.

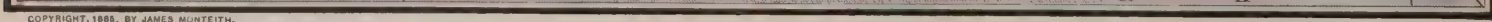
25. Vermont was first visited by Champlain, a French soldier, after whom the largest lake was named. In 1724, nearly a century afterward, a settlement was made at Fort Dummer, near the present site of Brattleboro'.

* *un' dā lā tīng*, in the form of waves; rolling.

cōl' lege, an institution where students acquire knowledge.

ū nī ver' sī ty, an assemblage of colleges in one place, where all branches of knowledge are taught.

watering-place, a place where people resort for the use of water, as bathing, etc.



NEW YORK, PENNSYLVANIA, AND NEW JERSEY.

GENERAL QUESTIONS.

Location.—In what part of the United States are these three states? What section of the United States is north-east? What natural boundary is south-east?—north-west? What British province north?—north-west? What states on the south?—on the west?

Latitude and Longitude.—On what parallel of latitude is the northern boundary of New York? What parallel crosses the southern part of New Jersey? Over how many degrees of latitude do these three states extend? What is the distance, in miles, between the northern boundary of New York and the southern point of New Jersey? What country in Europe is in the same latitude as these states? (*See margin of map.*) What territories of the United States are in the same latitude as these states? What meridian touches the eastern coast of New Jersey? What meridian passes through the city of Pittsburgh? How many degrees of longitude are between New York City and Pittsburgh? How many minutes of time are equivalent to one degree? What, therefore, is the difference in actual, or solar, time between New York and Pittsburgh? Is it earlier, or later, in New York than in Pittsburgh? On which does the sun shine first, every morning?

Surface.—What mountain ranges are in these states? In what direction do they extend? In what directions does the land slope? What lakes are on the boundary of two of these states? What river is their outlet? Mention the most important rivers in these states.

Climate and Products.—What is the mean temperature of northern New York? (*See brown figures in yellow margin.*) Of southern Pennsylvania? What is the temperature of corresponding latitudes in Italy? (*See red margin.*) What causes this difference? What are the principal products of New York?—of Pennsylvania?—of New Jersey? (*See chart in upper corner.*) Are cotton and sugar-cane cultivated in these states? Why?

Cities.—Which is the largest city in New York?—in Pennsylvania?—in New Jersey? Which is the most important of these? Mention the capitals of these states.

Commercial Geography.—How many hours would it take you to go from New York to Albany?—(*See scale of railroad time.*)—to Buffalo?—to Philadelphia?—to Washington? Through what cities would you pass in going from New York to Washington? What railroad center in the western part of Pennsylvania? How far is it, in miles, from New York to Philadelphia?—to Washington?—to Pittsburgh? How could a person go from New York to Philadelphia, by steam-boat? How long would it take? (*See scale of steam-ship time.*) Which is the chief mining state?—the leading commercial state?

Standard Time.—In what division of standard time are these states? In what part of these states is the western boundary of this division? (*See lines of red crosses.*) What cities near this boundary? In traveling from New York or Philadelphia, what change of time would you find west of Pittsburgh? To be like the standard time, would you turn the hands of your watch forward, or backward, and how much, on leaving Pittsburgh on your way west?

Between what parallels of latitude is New York? Where would the sun rise the earlier, at New York City, or Buffalo? At Pittsburgh, or Philadelphia?

NEW YORK.

What are its water boundaries? What do they separate from New York? What natural curiosity on the western boundary?

What states bound New York on the east? What two states form its southern boundary? In what direction from New York is the Dominion of Canada?

What sea-coast has New York? What two islands in the south-eastern part of New York? By what waters is Long Island surrounded? How long is it? (*See map of Long Island, in south-west corner.*)

In what part of the state is the highest land? What mountains in the north-eastern part of the state? What other mountains in the state? Mention the highest peak. Where is it?

What lake on the north-eastern boundary of the state? What lake south of that lake? In what direction does the water of these lakes flow? What lakes in the central part of the state? Which is the largest? What river is their outlet? What lake in the south-western part of the state?

Which is the largest river? How long is it? Where does it rise? Into what does it flow? How far is it navigable for steam-boats? Mention its most important branch. What rivers flow into Lake Ontario?—into the St. Lawrence River?—into Lake Champlain (*shām plān*)? What other large rivers have their sources in this state?

What canal connects the Hudson River and the Great Lakes? By what route can a boat, loaded with lumber, leave Toronto and reach New York City without going to sea? What canal connects the Hudson and Delaware (*del' a wār*) rivers?—Lake Erie with Lake Ontario?

Where is salt found? What part of the state is celebrated for grain?—dairy products?—fruit?—vegetables?—manufactures? Which is the higher, Lake Erie, or Lake Ontario? (*See diagram under the map.*)

What city is the metropolis of New York? Locate it. What advantages has New York, in location, over Philadelphia? What is necessary to make a city a commercial center? Which of these advantages has New York? Name two other cities that are commercial centers. What city is the center of the lumber trade? Through what cities would you pass in going from New York City to Montreal? Where is Buffalo? Through what cities would you pass in going from New York to Buffalo? What cities are in the southern part of this state?—on the west bank of the Hudson River? What celebrated springs in this state? What large city in the western part of Long Island? What water separates it from New York City? What other city on this island?

Map Drawing.—To draw a map of New York, first draw an oblong figure, four inches long, and two inches wide, dividing it into eight squares, and adding two squares in the south-east; and then proceed, as directed on page 37. Draw the northern boundary of New York, from the St. Lawrence River to Lake Champlain, the eastern boundary, to New York City, and complete Long and Staten Islands; then the southern boundary to Lake Erie, the western, the north-western. Locate the principal mountains, lakes, rivers, and cities. What is the extent of New York from east to west?



PENNSYLVANIA.

What lake is the north-western boundary of this state? In what direction would you go from Harrisburg to New York?—to Washington? Between what meridians is this state?

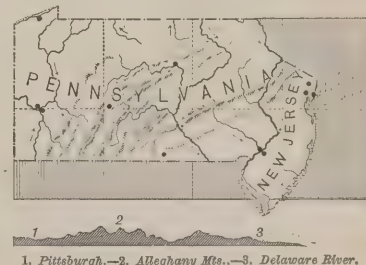
In what direction do its mountains extend? For what are they celebrated?

Name the principal river of the state? Where is its source? Where is its mouth? About how far is it navigable? On which side of the river are the most branches? Why? Name the principal branches. What large river in the west is formed by the uniting of two rivers? Name them. Where do they rise? In what directions do they flow? How far is each navigable? What branch of the Delaware River is in this state?

In what part of this state is coal obtained?—iron?—petroleum?—lumber? What is the use of coal?—of iron? What natural production is found in the north-western part of the state?

What two cities are in the north-eastern part of the state? What two in the western? Which is called the "Smoky City"? Why? (*See picture on next page.*) Which is the most important city? In going from it to Pittsburgh, through what cities would you pass? In what part of the state is Allentown?—Bradford?—Oil City?—Williamsport?—Norristown?—York?—Reading?—Lancaster?

Map Drawing.—First draw an oblong figure, four by two inches, and divide it into eight equal squares; then, beginning at Lake Erie, draw a map of Pennsylvania and New Jersey, as directed on page 37, locating the principal mountains, rivers, capes, and cities. What is the length of Pennsylvania?



NEW JERSEY.

What natural division of land is New Jersey? Name its water boundaries. What state west?—north? What is the extreme length of New Jersey?—its width? What cape on its eastern coast?—on its southern coast? What kind of a coast has New Jersey? (*See picture on next page.*)

In what part of the state is the highest land? In what direction does it slope? What mountains are partly in this state and partly in New York? In what part of New Jersey is the climate warmer than in New York? Why?

Where are grain and vegetables raised? What metal is mined in the state? In what part of the state?

What city in New Jersey, opposite Philadelphia? What celebrated watering-places are on the sea-shore? Where is Long Branch?—Sandy Hook?



THE MIDDLE ATLANTIC STATES.

1. **Position.**—The Middle Atlantic States are situated between the New England and the Southern States, and have an area equal to about two and a half times that of Kansas. In latitude, they correspond with Italy and Greece. (See margin of maps.)

2. **Surface.**—This section comprises portions of the Atlantic Slope, the St. Lawrence Basin, and the Mississippi Basin.

3. *The Atlantic Slope* is, commercially, the most important part of the United States.

4. *The St. Lawrence Basin* is remarkable for the fertility of its soil and the beauty of its scenery. It is connected with the Atlantic Slope by the Mohawk Valley.

5. That portion of the *Mississippi Basin* which is included in this section, is one of the richest coal and iron regions in the world.

6. *The Appalachian System* of Mountains consists of parallel ranges, the highest of which is the Alleghany range. The Adirondack group of mountains, whose highest peak is Mount Marcy, is comprised in this system.

7. **Lakes and Rivers.**—The lakes, which are nearly all in New York, or on its boundaries, are remarkable for their picturesque beauty. Some of the largest rivers of these states flow partly through passes, gorges, or narrow valleys, into the ocean. The principal of these are the Susquehanna, the James, the Potomac, the Hudson, and the Delaware.¹

1. It is remarkable that the largest rivers flowing into the Atlantic have their sources west of the Appalachian highlands. The Hudson River is one of the most important routes

8. **Soil.**—These states contain nearly every variety of soil. East of the mountains, it is generally sandy, with swamps near the coast, while in the valleys between the mountains and on the slopes west of them, it is fertile and well cultivated.

9. **Climate.**—The climate, which is much warmer in the southern part of this section than in the northern, has a mean annual temperature about ten degrees cooler than that of Italy and Greece, in corresponding latitudes. Among the mountains, the cold in winter is intense.² The rain-fall, which is abundant, increases toward the south.

10. *The winds* are variable; and while they are moist on the coast, they are dry and healthful on the highlands of the interior. The storms of the northern part mostly originate in the western section of the United States, while those of the southern part are often cyclones proceeding from the Gulf Stream or the Caribbean Sea.³

11. **Vegetation.**—No other part of the North Temperate Zone surpasses this section in the variety of its trees and plants. Extensive forests of pine cover the highlands; the cypress, ju'ni per, and cedar* abound in the swamps; and the maple, hickory, oak, and black-walnut, in the river valleys. Hay, grass, tobacco, and garden vegetables are extensively produced.

12. **Minerals.**—This section yields more than one half the coal⁴ and iron, and nearly all the zinc, nickel, and petroleum,⁵ obtained in the United States.

13. **Industries.**—The Atlantic Slope is noted for its commerce and manufactures; the Basin of the St. Lawrence, for agriculture and dairying; the mountain region, for mining and lumbering; and the coast, for fisheries.

14. Nearly three fourths of the *foreign commerce* of the United States is carried on here, and the *manufactures* of these states are nearly equal in value to those of all the other states combined.

15. *Steam-ship lines* connect this section with every important sea-port in the world; and railways, with every large city in the United States, Canada, and Mexico.

16. **People.**—The people of the northern half of this group of states are engaged chiefly in manufacturing,

while those of the southern half are more extensively engaged in agriculture

17. **New York** excels every other state in the Union in population, manufactures, commerce, and wealth; it is, therefore, called the Empire State. Its extent from east to west is about the same as that of Kansas.

18. *Albany* is the capital. It contains one of the finest capitol buildings in the United States.

19. *New York* is the largest city on the Western Continent, and the fourth city in population in the world. It has a magnificent harbor, and excels* every other city in the United States in commerce and manufacturing.

20. *Brooklyn*, the third city in the United States, contains extensive manufactories and warehouses, a navy-yard,* and the residences of many business men of New York, with which city it is connected by the largest suspension-bridge in the world.

21. *Buffalo* is an important city on Lake Erie, and the western terminus of the Erie Canal. Its trade in grain, lumber, live-stock,* coal, and iron is immense.⁶

22. **Pennsylvania**, called the Keystone State, is a little more than half the size of Kansas. Its surface is mountainous. It surpasses every other state in iron manufactures, and supplies nearly all the anthracite coal in the United States. Its manufactures are very extensive.

23. *Harrisburg*, the capital, is in the center of a region abounding in coal and iron.

24. *Philadelphia* is the second city in the United States. It is noted for its great area, its manufactures, public buildings, and parks.

25. *Pittsburgh* and *Allegheny*, situated in the center of a great mining region, contain the most extensive iron and steel works in the United States.⁷

26. **New Jersey** is less than one tenth the size of Kansas. It is noted for its manufactures and garden products, and as a great highway of trade and travel.

27. *Trenton*, the capital, is famous for the manufacture of pottery and crockery.

28. *Jersey City* and *Newark* are the largest cities in the state. Their manufactures include iron, leather,* and jewelry.⁸

of transportation in the United States. It is connected by canals with Lake Erie, Lake Ontario, Lake Champlain, and the Delaware River.

2. **The temperature** is, at times, so low that the mercury in the thermometer freezes. (Mercury freezes at -37.9° F.)

3. **The storms** of the United States originate in the Gulf of Mexico, Caribbean Sea, Rocky Mountains, and the Pacific Ocean. Those from the Rocky Mountains are usually the severest. (See *New Physical Geography*, p. 108.)

4. **Two kinds of coal** are produced, an'thracite or hard coal, which is found in the eastern part of Pennsylvania, and bi'tu'minous or soft coal, which is found in the western part. The latter burns with a bright flame; the former, without it.

5. **Petroleum**, or mineral oil, is thought to be like coal, of vegetable origin. Wells are bored by means of steel drills driven by powerful machinery, often to great depths before the oil reservoir is tapped. Sometimes the pressure of gas within the oil reservoir forces the petroleum to the surface, causing the wells to overflow. In others, the petroleum is pumped to the surface. To increase the supply, a torpedo of nitro-glycerine is exploded at the bottom of the well. In many instances, reservoirs of highly combustible gas are struck in forcing oil wells. When ignited this gas sends a lurid flame into the air, lighting the

country for many miles around. These natural reservoirs of gas are often used to supply the towns near them with light and fuel. The use of natural gas by the iron, steel, and other mills in and around Pittsburgh, will save about 40,000,000 tons of coal, annually.

6. **Other important cities.**—IN NEW YORK,—*Rochester* is situated at the falls of the Genesee River. *Troy* is at the head of navigation on the Hudson. *Syr'acuse* is noted for salt wells. *Utica*, *Auburn*, *Oswego*, *Elmira*, and *Poughkeepsie* (pó kip'si).

7. IN PENNSYLVANIA,—*Scranton* is the center of the anthracite coal region, and contains iron, steel, and rolling-mills. *Reading* (rēd'ing) is a manufacturing city and railway center. *Erie* is the principal lake-port in the state.

8. IN NEW JERSEY,—*Paterson* is situated near the falls of the Passaic. It is celebrated for its cotton-mills, locomotive works, and the most extensive silk-mills in the United States. *Elizabeth*, *Camden*, and *Hö'ö'ken* are all noted for manufactures.

* *cy'press*, *ju'ni per*, and *ce'dar* are evergreen trees. *Maple*, *hickory*, *oak*, etc., are said to be de cid'u ous, because their leaves fall in the autumn.

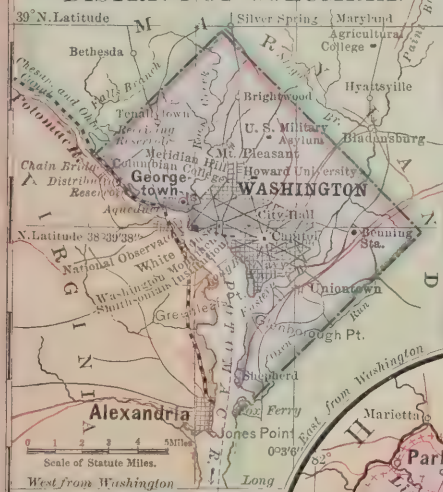
ex cel', to surpass or go beyond. *navy-yard*, a ship-yard in which war vessels are built, repaired, etc. *live-stock*, animals raised on a farm, or a ranch.

leath'er, the skin of an animal, dressed and prepared for use.

CENTRAL or 90th. MERIDIAN TIME

EASTERN or 75th. MERIDIAN TIME

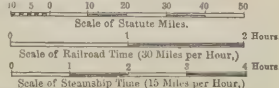
DISTRICT OF COLUMBIA.



VIRGINIA, WEST VIRGINIA, MARYLAND and DELAWARE.

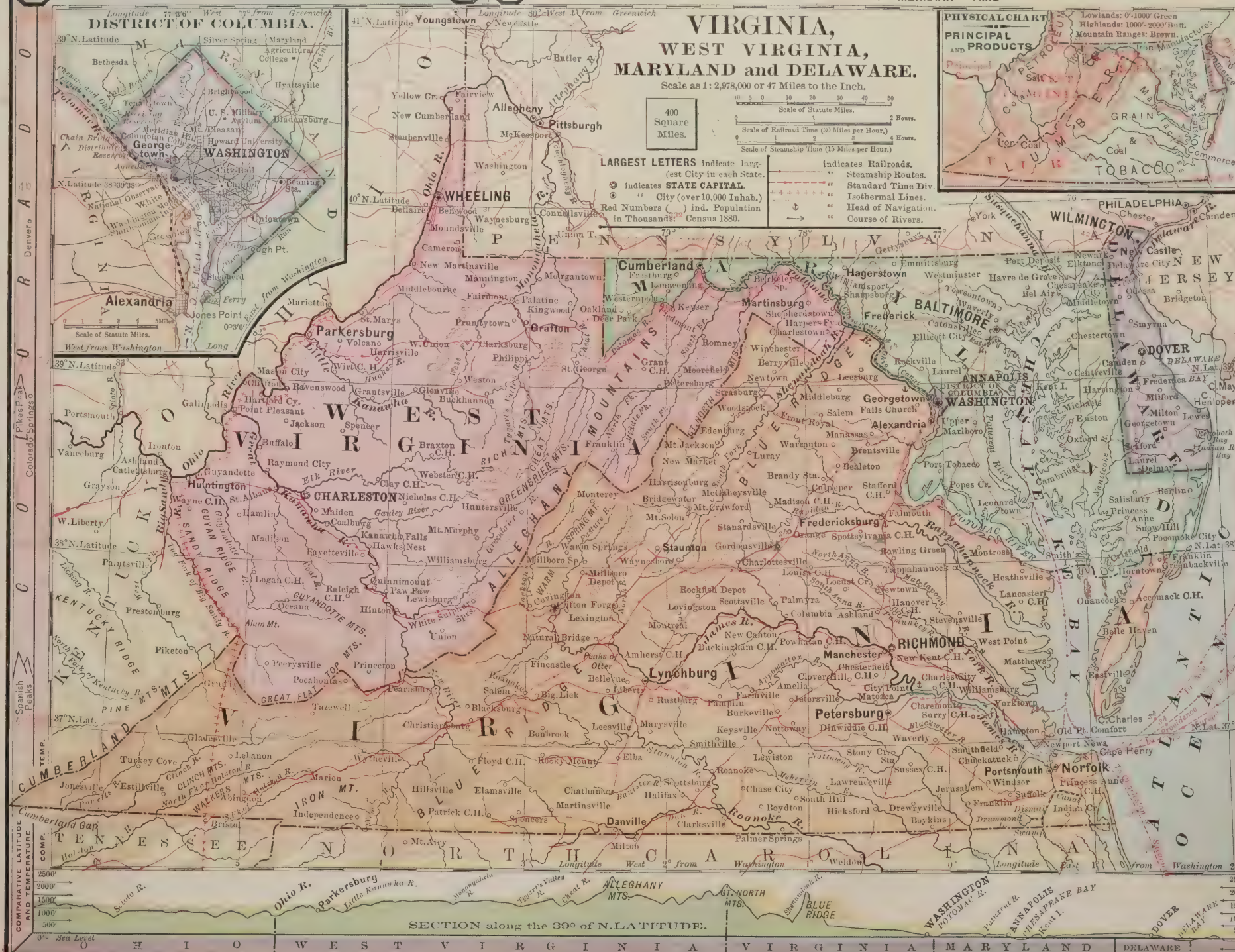
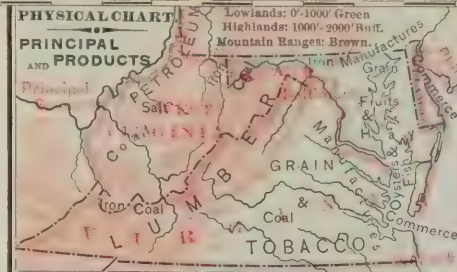
Scale as 1:2,978,000 or 47 Miles to the Inch.

400 Square Miles.



LARGEST CITIES indicate largest City in each State.
 • indicates STATE CAPITAL.
 • City (over 10,000 Inhab.)
 Red Numbers ind. Population in Thousands. Census 1880.

— indicates Railroads.
 — Steamship Routes.
 — Standard Time Div.
 — Isothermal Lines.
 — Head of Navigation.
 — Course of Rivers.



SECTION along the 39° of N. LATITUDE.

DELAWARE, MARYLAND, VIRGINIA, AND WEST VIRGINIA.

GENERAL QUESTIONS.

Location.—In what part of the United States are these states? Between what states? What large body of water east? What large branches indent the shores of these states? Which is the larger? How long is it?

Latitude and Longitude.—What parallel of latitude forms the greater part of their northern boundary?—of their southern boundary? What countries of Europe are in the same latitude as these states? (*See margin of map.*)

Near what parallel of latitude is the city of Wheeling?—Washington?—Norfolk? In about what latitude is Richmond?—Annapolis? Over how many degrees of latitude do these states extend? What meridian passes near the eastern coast of Delaware?—near the western extremity of Virginia? Over how many degrees of longitude, therefore, do these states extend? What is the longitude of the City of Washington, reckoned from Greenwich (or London)? (*See number of degrees north of Maryland.*) In about what longitude is Wilmington?—Lynchburg?

Outline.—Locate a peninsula, and mention the state and parts of states of which it is composed. What waters almost surround it? What cape is its southern extremity? What cape on its eastern coast?

Surface.—Where is the highest land? Of what mountains is it composed? In what direction do the mountain ranges extend? In what directions does the land slope? Mention the most important rivers in these states. Why do you think so? Which is the largest river? What rivers are remarkable for their wide mouths? On which is the capital of Virginia? Which flows between Maryland and Virginia? What river in West Virginia flows north? What two flow north-west? Which of these flows through two states? Through what mountain ranges does it flow? In what state does it rise? What large river in Virginia flows through the Blue Ridge? What river flows north-east, parallel with the Blue Ridge? Into what does that river flow? Which of these states have the most mountains? Which has no mountains?

Climate and Products.—What is the mean annual temperature under the parallel of 39° north latitude? (*See margin of map.*) Under the parallel of 37°? What are the principal products of these states? Where are the mines?—the manufacturing centers? In what part of these states are the people engaged in commerce? Where is tobacco raised extensively? Where are oysters obtained?

Cities.—Mention the largest city in the District of Columbia,—in Maryland,—in Virginia,—in West Virginia,—in Delaware. In what direction from Washington is Wheeling?

Commercial Geography.—Name the principal sea-ports,—railroad centers. What railroad extends from Philadelphia to Washington? Through what cities does it pass? What railroad center in Virginia? What are the principal exports from this section? How long would it take you to go from Washington to Richmond by railroad?—from Washington to Baltimore? On what waters would you sail in going by steamer from Baltimore to Wilmington? In what directions would you sail? On what waters would you sail from Washington to Petersburg? In what directions? How far is the Potomac River navigable?—the Monongahela (*mở nồn ga hê'la*)? What river is formed by the Monongahela and the Alleghany River?

Standard Time.—When it is noon at London, what time is it in these states? In which time-division is the greater part of these states? Where is the boundary line between the Eastern and the Central division? (*See line composed of red crosses.*) What is the difference between the standard time of these states and that of Ohio and Kentucky? When it is seven o'clock in West Virginia, what time is it in Ohio? In traveling west, where would you alter the time of your watch? How? How much?

DELAWARE.

What natural boundaries has Delaware on the east? From what state do they separate Delaware? What state forms its southern and western boundaries?—its northern boundary? What is its mean annual temperature?

Where is Cape Henlopen (*hên w'pen*)? What city in the northern part of the state? What city is the capital?

MARYLAND.

What part of Maryland is the narrowest? How wide is it in its narrowest part? What states nearly meet at this point? What states form boundaries of Maryland? In what direction does its coast extend?

What divides Maryland into two parts? What rivers flow into that bay? Which flows into its northern part?

What part of the state is crossed by the Alleghany and Blue Ridge mountains? What river flows through these mountains? Into what does it flow?

Mention the productions and industries of Maryland. Mention its capital,—its largest city. How far is Baltimore from Washington?—from Philadelphia? Where is Cumberland?

DISTRICT OF COLUMBIA.

What important city is situated on the Maryland side of the Potomac River? What is that part of the country called in which it is situated? By what state is the District of Columbia bounded on three sides? By what river on one side? What celebrated buildings in Washington?

VIRGINIA.

What are the water boundaries of Virginia? From what do these boundaries separate it? What other natural boundary has it? What states are separated from Virginia by those mountains? What states are south of Virginia?

How long is its southern boundary? (*See diagram of comparative area on this page.*) What is its greatest distance from north to south? What body of water makes a peninsula of part of the state? Which part? What two capes on the coast? At the mouth of what bay are they?

In what general direction does the surface of Virginia slope? Where is it the highest? What mountains are in this state? In what direction do they extend? Where are the Iron Mountains? Why are they so named?

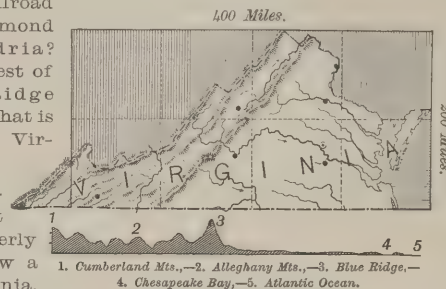
Where do the principal rivers rise? Into what body of water do they flow? Mention the principal rivers of Virginia. Which is the largest? What river in the north-western part of the state? Where is the head of navigation of the Rappahannock (*rấp a hân'ok*) River?

What is the difference in the mean annual temperature of Richmond and Boston? (*For the temperature of Boston, see map of New England States.*) What causes the difference?

In what part of the state would it be best for a farmer to locate? Why? What are the principal productions of this part of the state? Where would it be the best for a lumberer to settle? In what part of the state would miners find work? What mines are there?

What town celebrated in the Revolutionary War is on the York River? What large city on the James River? What sea-ports are situated near the mouth of the James River? What city is on the line of railroad from Alexandria to Danville? Where is Alexandria?—Danville? What city on the railroad between Richmond and Alexandria? What city is west of the Blue Ridge Mountains? What is the capital of Virginia?

Map Drawing.—Begin at its most northerly point, and draw a map of Virginia, according to directions on page 37.



WEST VIRGINIA.

What two states are north-east of West Virginia? What state is east?—south?—west?—south-west? What are its water boundaries? Of what are they branches? What states do they separate from West Virginia?

What mountains form part of the eastern boundary? What mountains are in this state? In what direction does the surface of West Virginia slope? Where are the valleys?

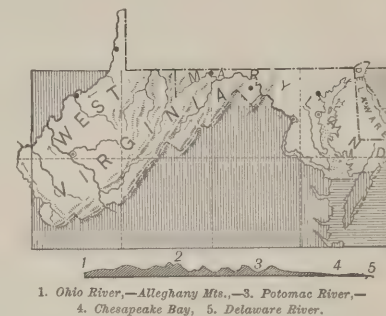
Mention three large rivers in this state. Which is the largest? In what direction does the Monongahela River flow? In what direction do the two others flow?

How does the mean temperature compare with that of Virginia? In what part of the state is salt found? In what other state, that you have studied about, is salt found? What is found in the north-western part of the state? What are the occupations of the people in the eastern part of the state?

What springs are in the south-eastern part of the state? What city is in the north-western part? Mention the other important cities. Which is the capital?

Map Drawing.

Draw within the common measure, the three states, Delaware, Maryland, and West Virginia; first, their northern boundaries, and next, their eastern, southern, and western. Proceed as directed on page 37. What is their extent from east to west?





29. **Delaware** is, with one exception, the smallest state in the Union, being about one fortieth the area of Kansas. Its chief industries are manufacturing, dairying, and the raising of fruits and vegetables. It yields, also, kaolin and marl.*

30. *Dover*, near the center of the state, is the capital.

31. *Wilmington*, the chief city and sea-port of Delaware, is noted for its extensive establishments for the building of cars and iron vessels. Its manufactures include leather, carriages, and gunpowder.*

32. **Maryland** produces grain, fruit, and tobacco. Its mountains, which are in the west, contain coal and iron. Chesapeake Bay, which extends far inland, dividing the state into two parts, furnishes great facilities for commerce; its oyster fisheries are celebrated.¹

33. *Annapolis*, the capital, is situated on the Severn River, near its entrance into Chesapeake Bay. It contains the United States Naval Academy and the Naval Observatory.

34. *Baltimore*, the largest city between Pennsylvania and the Gulf of Mexico, is the eastern terminus of important railways. It exports large quantities of grain, cotton, tobacco, and canned fruit, vegetables, and oysters.

1. The shores and inlets of Chesapeake Bay are the resorts of immense flocks of water-fowl. The peninsula formed by Chesapeake and Delaware bays is called the Eastern Peninsula. **Mason and Dixon's Line**, the present boundary between Maryland and Pennsylvania, was named for two distinguished mathematicians

who surveyed and established it in 1767. This boundary had long been the subject of dispute, riot, and bloodshed, owing to the overlapping claims made by the two colonies. **Delaware** was named for Lord De la Warr; **Maryland**, for Queen Henrietta Maria; and **Virginia**, for Elizabeth, the Virgin Queen of England.

35. The District of Columbia belongs to the general government, and is under the control of Congress.² It has no representation in Congress, and the residents can not vote for presidential electors.*

36. *Washington*, the capital of the United States, is situated in the District of Columbia. Its massive public buildings, its fine, broad avenues, and the many distinguished men from every nation in the world, as well as from every state and territory in the United States, who may be seen here, make this a city of peculiar interest. This city contains the capitol* in which Congress meets;³ also, the official residence of the president, and the Supreme Court of the United States.⁴

37. *Virginia*, which is about half the size of Kansas, has its southern boundary midway between the northern extremity of Maine and the southern point of Florida.

38. The *Appalachian System of Mountains* and the Atlantic Slope have their greatest width in this state.

39. A small peninsula, forming part of the state, is detached from it by Chesapeake Bay. It is known as the *Eastern Shore*.

40. The products of the state include grain, tobacco, coal, iron, and marble.

41. Among its educational institutions are William and Mary College, founded in 1660, and named after the

king and queen of England; and the University of Virginia, founded by Thomas Jefferson.

42. Seven presidents of the United States have been elected from Virginia.⁹

43. *Richmond*, on the James River, is the capital and chief city. It is celebrated for its tobacco trade.

44. *Norfolk* has a fine harbor, at the entrance to which is Fort Monroe.

45. *West Virginia*, which has an area of about one third that of Kansas, is the only state in the group which has no sea-coast, and which lies wholly in the Mississippi Basin. Its surface is generally mountainous and covered with forests. Its valleys are fertile; and its mines of coal and iron, very productive.

46. *Charleston*, on the Great Kanawha River, is the capital.

47. *Wheeling*, the largest city, is noted for the manufacture of machinery and nails, and the building of steam-boats.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about the Middle Atlantic States, as directed on page 43.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on the Middle Atlantic States, as shown on page 43.

2. The area of the District of Columbia is 70 square miles; it formerly contained 100 square miles, extending on both sides of the Potomac, but the portion ceded to the general government by Virginia was ceded back to that state. Georgetown is two miles above Washington, on the Potomac.

3. The capitol is one of the grandest buildings in the world. Its length is over 750 feet, and its height, 396 feet. It covers an area of three and one half acres. Here the sessions of Congress are held. Other buildings of great interest are the Arsenal, the State Department, the General Post-office, the Patent Office, the Treasury Department, the Smithsonian Institute, and the National Museum.

4. The Washington Monument, 555 feet in height, is the highest structure in the world.

5. Other important Cities.—IN MARYLAND,—Cumberland is an important coal market. Frederick and Hagerstown are in rich agricultural districts.

6. IN VIRGINIA,—Petersburg and Lynchburg are centers of an extensive tobacco trade.

7. IN WEST VIRGINIA,—Parkersburg is situated in an oil region and contains many petroleum refineries.

8. Health and pleasure resorts of the Middle Atlantic States.—In New York, Niagara Falls, Trenton Falls, The Thousand Islands, Lake George, Watkins Glen. Coney Island beaches, the Adirondack and Catskill mountains; in New Jersey, Long Branch, Atlantic City, and Cape May; and in Virginia, the Warm and Sulphur Springs, the Natural Bridge, Luray Caverns, and Old Point Comfort.

9. Distinguished men.—Born in New York, Martin Van Buren and Millard Fillmore, presidents; Washington Irving, author; John Jay, Alexander Hamilton, De Witt Clinton, and William H. Seward, statesmen; in Pennsylvania, Robert Fulton, inventor; James Buchanan, president; and Bayard Taylor, author; in New Jersey, Theodore Frelinghuysen, statesman; J. Fenimore Cooper, author; and Grover Cleveland, president; in Delaware, John M. Clayton, statesman; in Maryland, Charles Carroll, statesman; Commodore Stephen Decatur; Edgar Allan Poe, poet; in Virginia, George Washington, Thomas Jefferson, James Madison, James Monroe, William Henry Harrison, John Tyler, and Zachary Taylor, presidents; Patrick Henry and Henry Clay, statesmen; Winfield Scott, and Robert E. Lee, generals.

10. Historical Notes.—New York.—In 1609, Henry Hudson, an English navigator in the employ of the Dutch, discovered the river which bears his name. In the same year, the French, by right of Champlain's explorations, claimed the land now comprised in the northern part of the state. The Dutch, in 1613, established a trading-post on Manhattan Island, and, ten years later, built Fort Orange on the present site of Albany. The trading post on Manhattan Island became the village of New Amsterdam. The English, also, claimed this territory, and, in 1664, the Dutch governor, Peter Stuyvesant, was compelled to surrender the territory to the Duke of York. The name was then changed to New York; and Fort Orange,

to Albany. There were many conflicts between the French and Indians, and the English. Schenectady was burned, and most of the inhabitants massacred. Ticonderoga, Crown Point, Saratoga, Long Island, White Plains, Fort Washington, and New York City were scenes of military operations during the Revolutionary War. In this state Major André was captured.

11. Pennsylvania was first settled by Swedes in 1643. They were driven out by the Dutch, who afterward surrendered to the English. William Penn, in 1682, obtained a grant from Charles II. for all the territory comprising Pennsylvania and Delaware. Under his administration, the colony prospered. The first Continental Congress met in Philadelphia, and the Declaration of Independence was signed there. Philadelphia was the first capital of the United States. Here the first public library in America was established, and the first locomotives on this continent were made. Philadelphia was captured by the British, in 1777.

12. New Jersey was first settled by the Dutch in 1620; but soon after, it passed under the control of the English. Trenton, Princeton, and Monmouth were battle-fields of the Revolutionary War.

13. Settlements were made in Delaware by the Dutch and the Swedes, and both laid claim to it. The English came into possession of it in 1664. It was transferred to William Penn as a part of Pennsylvania. The Delaware River was discovered by Henry Hudson, in 1609. The state was visited by Lord De la Warr, in 1610.

14. Maryland was founded in 1634, by Lord Baltimore, as a home for persecuted Catholics. It became a royal province in 1691.

15. In Virginia was formed the first permanent English settlement in America. This was made at Jamestown, on the James River, under Captain John Smith. These colonists were unsuited to the founding of a colony and to the hardships of a frontier life. Smith, in a letter to his patrons in England, wrote: "I entreat you, send thirty carpenters, husbandmen, gardeners, fishermen, blacksmiths, masons, and diggers of tree roots, rather than a thousand such as we have". (1607.)

16. The early history of the colony is one of misery, and the administration, except Smith's, one of misgovernment. In 1624, the colony became a royal province, and so remained until the War of the Revolution. At Yorktown, was witnessed the surrender of Lord Cornwallis, in 1781, the closing event of the Revolution.

17. West Virginia formed a part of Virginia until 1863, when it was admitted into the Union as a state.

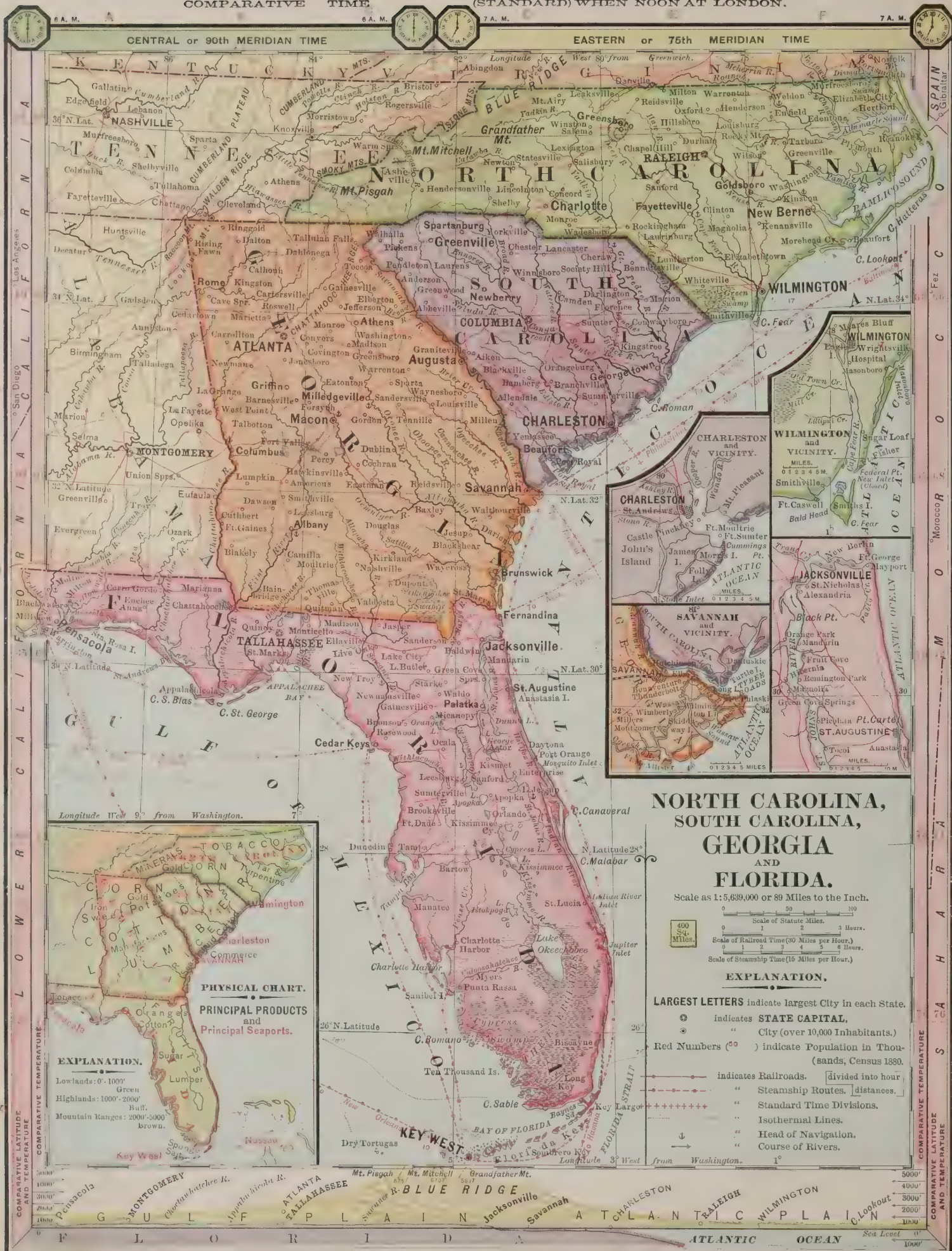
* *kā'ō ūn*, a clay of which porcelain is made.

mārī, a fertilizing earth, composed of carbonate of lime and clay.

gunpowder, a composition consisting of seventy-eight parts saltpeter, twelve of charcoal, and ten of sulphur.

elector, a person entitled to take part in an election; one of the persons chosen by the people in the United States to elect a president and vice-president.

cāp'itōl, a building in which a congress or state legislature meets to make laws.



NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, AND FLORIDA.

GENERAL QUESTIONS.

Location.—In what part of the Union are these states? What is their eastern boundary?—their southern? What two states west of them?

Latitude and Longitude.—What parallel of latitude crosses the northern part of North Carolina?—the southern part of Florida?

What countries in Europe and Africa are crossed by these parallels? What meridian passes through the eastern part of North Carolina?—the western part of Florida? When it is 7 A. M. in the eastern part of North Carolina, what time is it in Florida?

Outline.—Which of these states is a peninsula? Which has the greatest extent of coast? Which is the most northerly cape?—the most southerly? What trend has the coast of the three northern states in this section? How does it compare with the direction of the mountain ranges?

Surface.—Where are the highlands of this section?—the lowlands? What mountain ranges traverse the north-western part of this section? To what mountain system do these ranges belong? What is their direction? What is the highest peak of this section? In what direction do the rivers of the Atlantic Slope flow?—of the Gulf Slope? What rivers are state boundaries? What one flows in a northerly direction? In which state are there many lakes?

Climate and Products.—What is the mean annual temperature of the northern part of this section?—of the southern part? How does the mean temperature of this section compare with that of California?

What are the principal products of the lowlands?—of the highlands? What minerals are found in the highlands? Which state is celebrated for tobacco?—for oranges?—for manufactures?—for sponge fisheries?

Cities.—Mention the largest city in North Carolina,—in South Carolina,—in Georgia,—in Florida. Mention two important sea-ports on the Gulf Slope,—three on the Atlantic Slope. Which is the largest city in this group of states? What city is situated on a small coral island? In what direction are Charleston and Wilmington from New York?—from San Francisco? (See map of U. S.) What cities near the head of navigation?

Commercial Geography.—How do the states of this section compare in the extent of railways with the Middle Atlantic States? Which of these states has the greatest number of miles of railway? What is the principal railway center of Georgia? In what direction, and on what waters would you sail from Key West to New Orleans?—from Charleston to New York?—from Pensacola to Havana?—from Savannah to Nassau? What fortifications at the mouth of Savannah River?—(See map of Savannah and vicinity.)—at the entrance to Charleston Harbor? (See map of Charleston and vicinity.) In going from Columbia to Macon, at what point would you change the time of your watch?

NORTH CAROLINA.

In traveling from Maryland to North Carolina, through what state would you pass? In what direction? What is the water boundary of this state? What is the southern boundary? What mountains form the western boundary? From what do they separate it?

What two sounds indent the eastern coast of this state? What capes project into the Atlantic Ocean? Which is farthest east?

What mountains cross this state? Mention and locate the highest peak. (See profile, or sectional diagram.) What large rivers are wholly in this state?—partly in it? How far is the Cape Fear River navigable?

Into what does it flow? What swamp in the north-eastern part of the state?—in the southern part? In what part does the isotherm of 60° Fahr. cross the state?

In what part of the state are its mines? Where is tobacco raised?—corn? What is the principal sea-port? How is it situated?

What and where is the capital?—the largest city? What and where are the following: Cape Fear, Yad'kin River, Charlotte, New Berne, Roanoke?

Map Drawing.—Draw a map of North Carolina, as directed on page 37.

1. Key West, the most southerly point of the United States, is within one and a half degrees of the Torrid Zone. It is on a small coral island which belongs to Florida.

2. These anchors mark the lower edge of the terrace which separates the lowlands, or coast plain, from the midlands. Notice that the head of navigation of each large river is the site of an important city, while at, or near, the mouth, there is a sea-port.

SOUTH CAROLINA.

In what direction would you travel from Columbia to Wilmington?—to Atlanta? What water boundaries has South Carolina? What cape projects from its eastern coast? What sound indents the southern part? In what part are the highlands?

What two rivers flow into the Atlantic Ocean? By what two rivers is the San tee' formed? What is that part of the Great Pedee' River called, which is in North Carolina? Where are the sources of nearly all the rivers of this state? Into what do they flow?

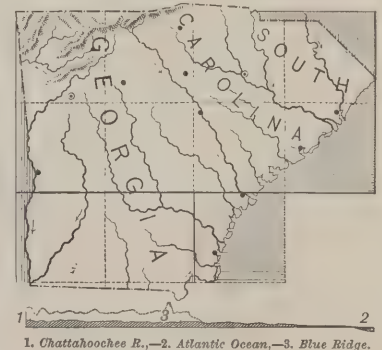
How does the climate of this state compare with that of Florida?—Pennsylvania?—Maine? What important article of commerce is raised on and near the south-eastern coast? Where is rice cultivated? Mention the other products of this state. What is the principal occupation of the people? What is the capital of South Carolina?—the chief sea-port?—the largest city? Mention and locate three other important cities.

GEORGIA.

In what direction is Georgia from South Carolina?—from Florida? What natural boundaries has this state? By what state and river is Georgia bounded on the west?—on the south? In what part of the state are its mountains? Mention them. What is their general direction. What two rivers unite and form the Alabama River? Mention other navigable rivers of this state. To what city is the O co'nee River navigable?—the Ocmulgee (*Ok mul'gee*)? What large swamp in the southern part of the state?

What is the difference in mean annual temperature between the northern and the southern part of the state? Is the temperature of this state higher, or lower, than that of California? (See margin.) Where is the mineral region of Georgia? What are the agricultural products? What city is the capital and metropolis? What two important cities on the Savannah River? What city near the center of the state? Where and on what river is Columbus?—Ath'ens?—Milledgeville?—Rome?

Map Drawing.—Draw a map of South Carolina and Georgia, as directed on page 37. What is their extent from east to west?



FLORIDA.

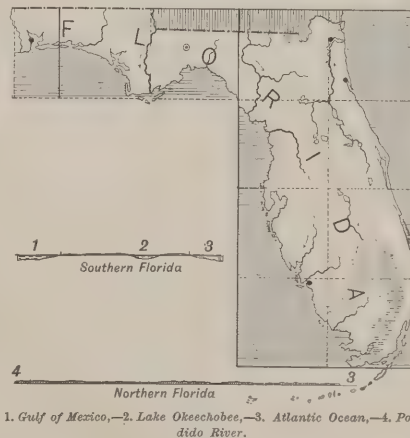
What natural division of land is Florida? What waters border on it? What parallel crosses its central part? What is the length of this state from north to south? What peculiarities of surface in the southern part? What bays on the western coast? What islands south of Florida?

What two capes project from the eastern coast?—the south-western? In what part of North America is there another cape having the same name as one of these? Where is Cape San Blas?—Romano (*ro-ma'no*)? Are there any mountains or highlands in Florida? In what direction does the western part slope?—the north-eastern?

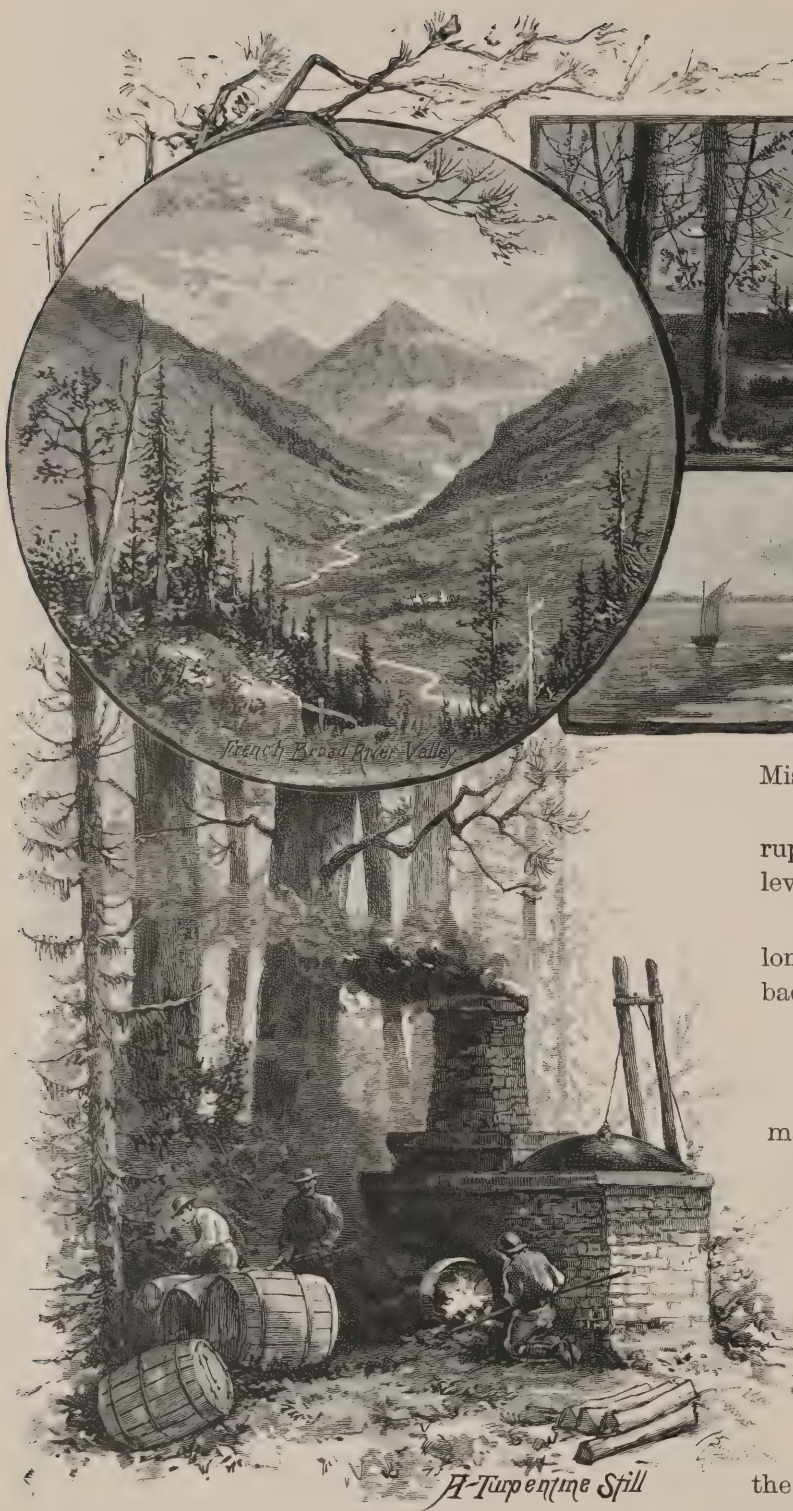
Where is the Suwanee (*su-wa'nee*) River? In what direction does it flow?—the St. John's River?

What is the mean annual temperature of the northern part of this state?—of the southern part? In what part of the state is tobacco raised? What fruits are raised in this state? Where are sponges obtained? What are they? Where is salt obtained?

What is the capital of Florida? What two cities on the St. John's River?—on the Atlantic Coast?—on the Gulf Coast? Which is farthest west? Mention two sea-ports. Locate the Dry Tortugas (*tor-tod'gas*),—Lake Okeechobee,—Tampa Bay,—Apalach'ee Bay,—the Everglades. What state has the lowest and most level surface?



Map Drawing.—Draw a map of Florida, as directed on page 37.



Tennessee, and Indian Territory, in the Mississippi Basin; and Alabama, Mississippi, and Louisiana are partly in the Gulf Slope, and partly in the

Mississippi Basin. Florida extends farthest south.

2. **Surface.**—In the northern part, the mountains interrupt* the general level. The southern part is low and level along the coast, but high and rolling in the interior.

3. Nearly the whole extent of coast is protected by long, narrow sand bars, formed by the waves which push back the sediment* brought down by the rivers. Along the southern coast of Florida, are extensive reefs of coral, shells, and sand.¹

4. *The land bordering on the coast* is low and marshy, much of it being scarcely above the sea-level. Green Swamp and a part of the Great Dismal* Swamp are in North Carolina, Okefinoke² Swamp is in Georgia, and the Everglades³ are in Florida. The swamps in the lowlands of the Mississippi River are extensive.

5. *The highest land* east of the Mississippi River is in the western part of North Carolina.

6. From the crest of the Appalachian System of Mountains, the surface of this section slopes to the east, south, and west.

7. *The mountains* of this section situated west of the Mississippi River, are the Ozark' Mountains, which extend through the north-western part of Arkansas, and the Gaudalupe' and others, in the western part of Texas.

8. **Lakes and Rivers.**—Most of the lakes are near the coast, but in Arkansas and the north-western part of Louisiana, are small groups of lakes. There are, also, numerous bayous⁴ and lakes connected with the Mississippi River.

THE SOUTHERN STATES.

1. **Position.**—This section of the United States is situated in three physical regions,—the Atlantic Slope, the Gulf Slope, and the Mississippi Basin. North Carolina, South Carolina, and the eastern parts of Georgia and Florida are in the Atlantic Slope; Texas and the western part of Florida, in the Gulf Slope; Arkansas (är'kän sà),

1. These reefs, or islands, are formed in shallow water only, and seldom exceed a mile in width. A few are rocky, but many are covered with grass, shrubs, and trees.

2. Okefinoke (o kē fī n' d' ke) Swamp is partly overgrown with vines, weeds, and bushes. It contains forests, lakes, and islands.

3. The Everglades are extensive marshes, or shallow lakes, inclosing islands covered with cypress, palmetto, oak, vines, shrubs, and high grass.

4. Bayou (bā' oo) is an offshoot of a river. * sē d' i ment, settlings;—earth, sand, etc. * in ter rupt', to break the even surface. dismal (diz' mal), dark, gloomy.

9. *Rivers* are numerous. Those of the Atlantic Slope are navigable* but for a short distance from their mouths, while some of those in the Mississippi Basin and the Gulf Slope are navigable for hundreds of miles.

10. *Soil*.—The soil is generally rich and productive. Along the coast, it consists chiefly of the sand, earth, and other matter brought down from the mountain sides by the numerous rivers. In the highlands and the pine-barrens, there is much sterile land. The western parts of Texas and Indian Territory contain extensive tracts of sandy soil which is generally dry and barren.

11. *Climate*.—*The prevailing winds* of the southern part of this section are from the Caribbean Sea, or from the Gulf of Mexico, producing an annual* rain-fall varying from forty inches in the north-west to seventy-five inches in the south-east.⁵ The climate is, therefore, hot and moist, except on the highlands, where it is more temperate.

12. *The summers* are hot and the winters mild. Along the coast, the heat is tempered by sea winds.

13. *Vegetation*.—The palmetto and live-oak⁶ trees are abundant on the islands, vast forests of yellow pine extend along the coasts, cypress and cedar cover the swamps, poplar and magnolia are numerous on the Gulf Coast, while the river-valleys of the interior contain forests of oak, maple, sycamore (sik'a mör), hickory, and black-walnut.

14. *The fruits* of the warmest portions include oranges, lemons, figs, and bananas (ba nă' nă).

15. *Minerals*.—The mineral resources of the highland region are inexhaustible. Coal, iron, zinc, lead, gold, graphite,⁷ and emery⁸ abound, besides marble of every variety, ka' o lin, and phosphate marls.⁹

16. *Animals*.—The wild animals include the bear, deer, raccoon, and opossum.¹⁰ Alligators are found in the swamps and sluggish streams.¹¹ Rattlesnakes, humming-birds, and par' o quets are common in some parts of the South.

5. *Cyclones* near the coast of the South Atlantic States are frequent in summer. They are storms in which the winds have a whirling motion.

6. *The palmetto* is a species of palm. The *live-oak* is a tough, hard wood used in ship-building.

7. *Graph' ite*, or black lead, or plumbago (*plum bŭ' go*), is a substance of which lead-pencils are made.

8. *Emery*, or co run' dum, is a hard mineral used for cutting gems, or for polishing glass, metals, etc.

9. *Phosphate marls* are earthy substances used as fertilizers.

10. *O pos' sum* is a small animal, the female of which is characterized by a pouch for carrying her young. Sometimes the young will cling to the fur of the mother's back and entwine their tails around that of the mother while she holds it over her back.

11. *The alligator* lays her eggs in the sand, to be hatched by the heat of the sun.

12. *Rice* is cultivated on low land which is so situated as to be flooded at will. The fields are protected by banks, so that the surface may be kept under water for any length of time. A few days before the harvesting of the crop, the water is drawn off.

13. *Turpentine* is prepared by distilling the sap of the yellow pine and other coniferous trees. The gum remaining is rosin. Crude turpentine when purified, is the oil or spirits of turpentine used in mixing paint. Pine-barrens are barren tracts of land covered with pine-trees. *Tar* is obtained by burning wood of the pine or fir-tree with a close, smothering heat. The substances just named are called naval stores,

17. *Industries*.—*Agriculture* is the leading occupation. Rice and sea-island cotton are extensively cultivated on the tide-lands and the islands.¹²

18. *The pine-barrens* of this section yield lumber and nearly all the turpentine, rosin, and tar used in the United States.¹³

19. *The production of sugar* is the leading industry on the Gulf Coast;¹⁴ here, also, is a great variety of tropical fruits. Great quantities of early strawberries, peaches, and vegetables are sent to the markets of Northern States.

20. *Cotton* is the great product of the midland region. In the quantity and quality of cotton raised, the Southern States excel every other part of the world.¹⁵

21. *Indian corn and sweet potatoes* are cultivated extensively throughout the South, and its northern parts yield considerable *wheat and tobacco*.

22. *Manufacturing and lumbering* are rapidly growing in importance. The rivers afford an abundance of water-power for numerous flour and cotton-mills.¹⁶

23. *Stock-raising* is an important industry in various parts of the South, especially in Texas, where some of the cattle ranches, or stock farms, are of great extent. Horses and sheep are also numerous.

24. *Commerce* is confined chiefly to the products of the plantation and the forest. New Orleans is the principal shipping port of the Mississippi Basin.

25. *People*.—A large majority of the people of the Southern States are engaged in agriculture.

26. *The white inhabitants* are mostly of English descent, except in Louisiana, which contains many descendants of the French, called Cre'oles.

27. *The colored population* comprises about two fifths of the inhabitants.

28. *The Indians* of this section are nearly all in Indian Territory.

14. *Sugar* is prepared from the juice of the sugar-cane. The stalks of the cane, after being stripped of their leaves, are crushed between rollers to express the juice. The latter is placed in large pans, and heated until it becomes a thick sirup. A small portion of lime is added to clarify the sirup, which is skimmed to remove the impurities. The sirup is finally drawn into large wooden reservoirs; and, as it cools, most of it crystallizes into sugar. That which does not crystallize constitutes the molasses of commerce. To fit sugar for table use, it must be refined. This is accomplished by dissolving the crude or raw sugar in water, filtering it first through charcoal, and afterward, through cloth filters. It is then evaporated and recrystallized.

15. *Cotton* requires a warm, moist climate and a rich soil, conditions admirably fulfilled in the Gulf States. In many tropical countries, the cotton-plant is a tree which produces crops during several successive years; but in the United States, it is an annual, growing to a height of five or six feet only. The finest variety, known as sea-island cotton, is remarkable for its long, silky staple. Sea-island cotton was introduced into the United States from the Bahama Islands.

16. *A sudden descent* of the surface is met with midway between the Appalachian System of Mountains and the coast. Here are found falls and rapids in the streams. The large rivers being navigable as far as this line of descent where water-power for manufacturing purposes is abundant, cities and towns have been built here, among which are Richmond, Petersburg, Weldon, Raleigh, Columbia, and Augusta. The manufacture of flour and cotton goods is very important.

* *năv' i ga ble*, affording passage to vessels.

an' nu al, yearly.

is hilly and rolling*¹⁷; and its eastern part, low, sandy, and swampy.¹⁷ Large crops of cotton are raised annually, and tobacco is cultivated extensively in the northern and middle portions of the state. Rice and grapes, also, are among its products, and its forests yield tar, turpentine, and other naval* stores.

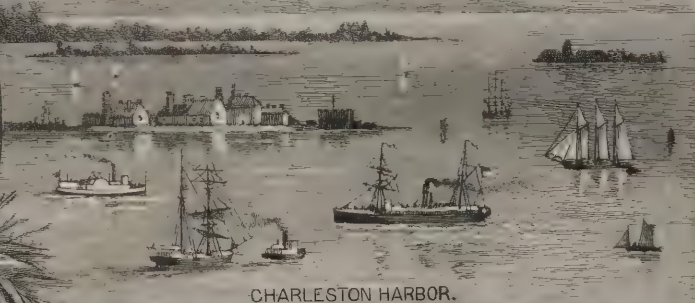
30. *Raleigh* (raw'li), near the Neuse (nūs) River, is the capital.

31. *Wilmington* is the chief city and sea-port.

32. **South Carolina** excels every other state in the quantity of the rice, and in the quality of the cotton, produced.¹⁸

33. The *white inhabitants* of this state comprise about two fifths of the population; the *colored inhabitants*, three fifths.

34. *Columbia* is the capital and chief railway center.



29. **North Carolina** contains the highest mountains on the Atlantic Slope of the United States. Its middle part

17. The mountain country of North Carolina has a delightful summer climate, and is a resort for health and pleasure, and, in the pine woods, the air is beneficial to people suffering from diseases of the lungs. Mt. Mitchell and Clingman's Peak are the highest mountains in the United States, east of the Mississippi River.

18. Traveling inland, from the coast of **South Carolina**, one would see, first, the coast islands and swamps, separated by numerous inlets, and celebrated for rice and sea-island cotton; then, a level, sandy region, extending 100 miles inland, and

35. *Charleston*, the metropolis,* is the largest city in the Southern States, except New Orleans. Its harbor is deep and wide, and is defended by Fort Sumter¹⁹ and other works. Charleston is the chief commercial city in South Carolina.

covered mainly with pine forests, with occasional rice swamps; next, the sand-hill country, whose upper border is the ridge. Above this, the surface is beautifully diversified, rising gradually to the Blue Ridge. In this range is Table Mountain.

19. **Fort Sumter** was captured from Major Anderson, by General Beauregard (bē' rē gīrd), at the beginning of civil war in the United States, April 14, 1861

* *roll'ing*, having a succession of rounded elevations and depressions; undulating.
nā' val, having to do with ships or a navy. *me trōp'o lis*, chief city.



GRAND CHASM TUGALOO RIVER.

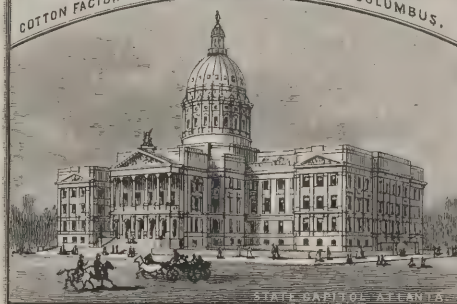


36. Georgia is nearly three fourths the size of Kansas. It ranks first among the Southern States in manufactures, and second in the production of cotton.

37. *Atlanta*, the capital and metropolis, is one of the most important railroad centers in the South. *Savannah* is the chief sea-port and cotton market in Georgia.

38. *Florida* is the most southern state in the Union. It reaches almost to the Tropic of Cancer and is in the region of the north-east trade-winds. Its area is about three fourths that of Kansas. Its surface is low and level, especially in the south, where lakes, marshes, and bayous are numerous. Five sixths of its boundary is sea-coast.²⁰ Tropical* trees and plants abound, and its extensive orange groves produce fruit of the best quality.

39. *Tal la has' see*, in the northern part of the state, is the capital of Florida. It is not situated on any water.



TOCCOA FALLS.

40. *Jacksonville*, on the St. John's River, has a mild winter climate.

41. *Key West*, situated on a small coral island, is the center of a large trade in tobacco and cigars. Sponges and green turtles* are found in the salt water in its vicinity.²¹

20. There is evidence that the southern part of Florida is slowly sinking. Many of the irrigating ditches made by the Spaniards in the 17th century are now below the sea-level.

21. The sponge of commerce is the skeleton, or frame-work, of a soft, gelatinous* creature found adhering to rocks and shells under the water.

22. Other important Cities.—IN NORTH CAROLINA,—*New Berne*, *Fayetteville*, and *Charlotte*.

23. IN SOUTH CAROLINA,—*Greenville* and *Aiken*; the latter is a celebrated winter resort for invalids.

24. IN GEORGIA.—*Augusta*, *Macon*, and *Columbus*.

25. IN FLORIDA,—*Pensacola* exports lumber. *St. Augustine* is the oldest settlement in the United States. *Palatka* is a winter resort. *Cedar Keys* is a commercial port.

26. Celebrated winter resorts.—*Aiken*, South Carolina; and *Palatka* and other places in Florida.

27. Distinguished men.—Born in *North Carolina*, Andrew Jackson, James K. Polk, and Andrew Johnson, presidents; and Thomas H. Benton, statesman: in *South Carolina*, General Francis Marion, soldier; and John C. Calhoun, statesman: in *Georgia*, John C. Fremont, explorer; and Alexander H. Stephens, statesman.

28. Historical Notes.—*Florida* was discovered by Ponce de Leon (*pōn' tha da lā ōn'*), who landed near the present site of *St. Augustine*, in 1512, and searched for a so-called fountain of youth. Portions of Florida were explored by Vazquez (*vāhs' keth*), Verrazani (*zāh' ne*), De Narvaez (*da nar vāh' eth*), and De Soto (*sō' tō*). Verrazani, a sailor, was sent to America by the king of France, in 1524, to claim for him as much of this continent as he could. Verrazani sailed along the coast from North Carolina as far

north as Newfoundland, naming that region New France. Soon after that, a party of Spaniards, under De Narvaez, landed in Florida and took possession for Spain; but nearly all of these men died or were killed by the natives. Notwithstanding this failure, other Spaniards led by De Soto, traveled over the wild region now included in Florida, Georgia, Alabama, and Mississippi, chiefly in search of gold. De Soto was not only disappointed in this, but he was compelled, while on his march westward, to fight many battles with the Indians. In these, his men suffered severely. Continuing his journey, he discovered the Mississippi River; but he died there soon after, and his remaining followers, wishing to conceal his death from the natives, buried him in the river, at night. Parts of this region were held, at various times, by Spain, France, and Great Britain. It was ceded to the United States in 1819.

29. In 1585 and 1586, Raleigh planted colonies on Roanoke (*rō a nōke'*) Island, but the first permanent settlements were made by emigrants from Virginia. North and South Carolina originally extended from Virginia to Florida. The first important settlement was made at Charleston, in 1680. Many of the settlers were French protestants, called Hu'gue nots. Georgia was, at first, a part of the Carolinas. Its first settlement was made through the influence of General James O'gle thorpe, who wished to establish a colony where oppressed debtors might begin business anew. John Wesley, Charles Wesley, and George Whitefield, all famous preachers, spent some time among the colonists of Georgia.

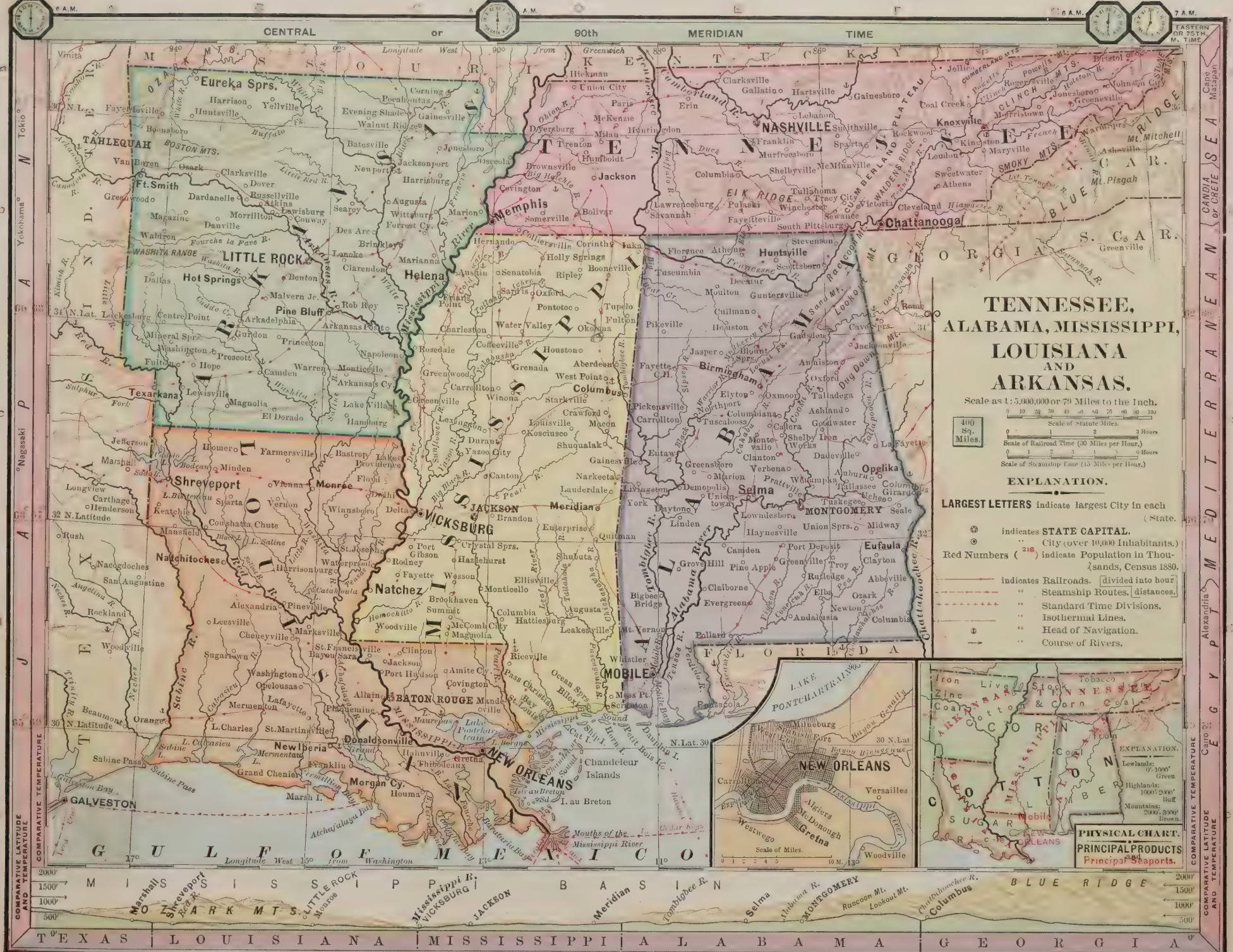
30. *St. Augustine* was founded in 1565, by Menendez (*ma nēn' delh*).

* *trōp' ic al*, being within the tropics, or in the Torrid Zone.

gē lāt' i nōus, resembling jelly.

tār' ūe, a reptile inclosed in a hard case formed by two hard, scaly shields.

COMPARATIVE TIME (STANDARD) WHEN NOON AT LONDON



TENNESSEE, ALABAMA, MISSISSIPPI, LOUISIANA AND ARKANSAS.

Scale as 1:5,000,000 or 70 Miles to the Inch.
 Scale of Railroad Time (30 Miles per Hour).
 Scale of Steamship Time (15 Miles per Hour).

EXPLANATION.

- LARGEST LETTERS indicate largest City in each State.
- ⊙ indicates STATE CAPITAL.
- City (over 10,000 Inhabitants).
- Red Numbers (216) indicate Population in Thousands, Census 1880.
- indicates Railroads. [divided into hour Steamship Routes, distances.]
- Standard Time Divisions.
- Isothermal Lines.
- Head of Navigation.
- Course of Rivers.



ALABAMA, MISSISSIPPI, LOUISIANA, ARKANSAS, AND TENNESSEE.

GENERAL QUESTIONS.

Location.—In what part of the United States is this group of states? What states and territory border on it? What sea-coast have three of these states? Mention those three states.

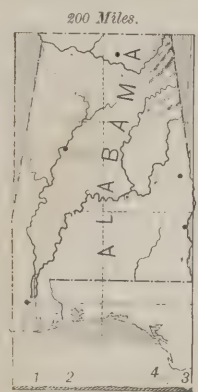
Latitude and Longitude.—What parallel of latitude is near the northern boundary of this group of states?—near their southern boundary? What meridian crosses the eastern part of Tennessee? What meridian forms part of the western boundary of Louisiana? What great sea in the Eastern Hemisphere is in the same latitude as these states? (*See margin.*)

Surface.—Which of these states contain mountains? Which contain none? Mention the principal ranges. In what direction do they extend? Mention the largest river which flows through this group of states. Which of these states are bounded by it? In what direction does it flow? What two large rivers flow in three directions? What are these directions? Through what state do these rivers flow? What state contains many lakes?

Climate and Products.—What is the mean annual temperature of East Tennessee? How does the temperature of the eastern parts of these states compare with that of the Mediterranean Sea? (*See east margins.*) How does the temperature of their western parts compare with that of Japan? (*See west margins.*) What is the mean annual temperature of the southern part of Mississippi? (*See brown, dotted line and degrees Fahr.*) What is the principal product of these states? (*See small chart.*) What are produced in their northern parts?—in their southern parts? Where are their mineral regions? Mention the minerals.

Cities.—Which is the largest city in these states? (*See red numbers, which indicate population, in thousands.*) What is its latitude?—its mean annual temperature? Between what river and lake is the greater part of this city?

Commercial Geography.—Mention the principal sea-ports. (*See physical chart.*) How is each situated? How far are they distant from each other, in miles?—in railroad time? (*See scales.*) What do they export? How long would it take you to go from Mobile to Montgomery?—from Vicksburg to Memphis?—from Memphis to Little Rock?



1. Tombigbee R.,—2. Alabama R.,—3. Chattahoochee R.,—4. Lookout Mt.

Standard Time.—What is the standard time in nearly every part of these states, when it is noon at London? (*See clocks at top of map.*) What time is it in the north-eastern part of Tennessee? (*Observe the line which separates the Central, from the Eastern Time Division.*) How much do clocks differ in standard time, along that line?

ALABAMA.

By what river is Alabama bounded on the south-east?—on the north-west?—by what water on the south?—by what state on the north?—east?—south?—west?

What part of the state is mountainous? Mention its mountains. In

what direction do the ranges extend? Does the greater part of the state consist of highlands, or lowlands? Where is the highest land?

In what direction do its principal rivers flow? What bay receives the water of nearly all of them? What two large rivers in Alabama? By what two rivers is the Alabama River formed? In what state does the Tombigbee rise?

What two cities near the center of the state?—two in the east?—one north of the center?—one north of the Tennessee River? Mention the capital of the state,—the largest city. On what waters are they situated?

Map Drawing.—Draw a map of Alabama, as directed on page 37. What is the length of this state?—its width?

MISSISSIPPI.

What river forms the western boundary of Mississippi?—part of the north-east boundary? What other boundary river has Mississippi? What mountains, if any, are in this state?



1. Mississippi R.,—2. Yazoo R.,—3. Tombigbee R.

In what directions do its principal rivers flow? Where is the highest land? (*See sources of its rivers.*) What rivers rise in the north-eastern part of the state? Which flow into the Mississippi River?—into Mississippi Sound? Into what gulf does this sound open?

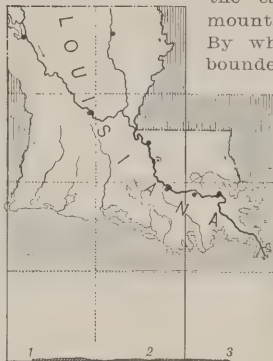
What two cities on the Mississippi River? What city is the capital? In what part of the state are Meridian and Columbus?

What are produced in nearly all parts of this state? (*See small chart.*) In what part is lumber produced?

Map Drawing.—Draw a map of Mississippi, as directed on page 37. What is the length of this state?—its width?

LOUISIANA.

What water boundary has Louisiana on the south?—on the east?—south-east?—west? What mountains, if any, are in this state? By what three states is Louisiana bounded?



1. Sabine R.,—2. Mississippi R.,—3. Pearl River.

What lake in the south-east?—in the south-west? What large rivers flow through this state? Into what does the Mississippi flow?—the Red River? Mention the largest tributary of the Red River.

What is the largest city in Louisiana?—its capital? On what are they situated? What cities in the north-west?—in the south?

Mention the principal products of Louisiana.

Map Drawing.—Draw a map of this state, as directed on page 37. How wide is Louisiana, from east to west?

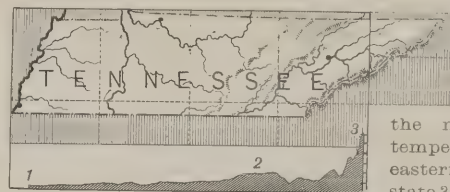
TENNESSEE.

By what mountains is Tennessee bounded on the east?—by what river on the west? What other boundary river has Tennessee? By what state is it bounded on the north?—on the east?—by what three on the south?

What mountains in Tennessee? In what direction do they extend?

What two large rivers flow through the state? Which drains the valleys of East Tennessee? In what states are the sources of the Tennessee River? How far is it navigable? (*See anchor.*) How far is the Cumberland River navigable?

What two cities in East Tennessee? What city in Middle Tennessee is the largest in the state? What large city in West Tennessee? On what river is it situated?



1. Mississippi R.,—2. Cumberland Mts.,—3. Mt. Mitchell.

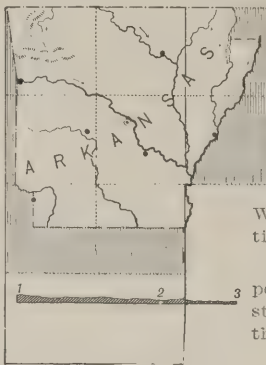
What is the mean annual temperature of the eastern part of the state?—of the western part? What causes the difference?

Map Drawing.—Draw a map of Tennessee, as directed on page 37. What is the length of this state?—its width?

ARKANSAS.

What boundary river on the east?—north-east?—south-west? By what three states is this state partly bounded? By what territory?

What part of this state is mountainous? What two ranges in the north-west?—one in the west? Does the greater part of the state consist of highlands, or lowlands? In what direction does the surface slope? What mountains are partly in this state, and partly in Missouri?



1. Fort Smith,—2. White R.,—3. Mississippi R.

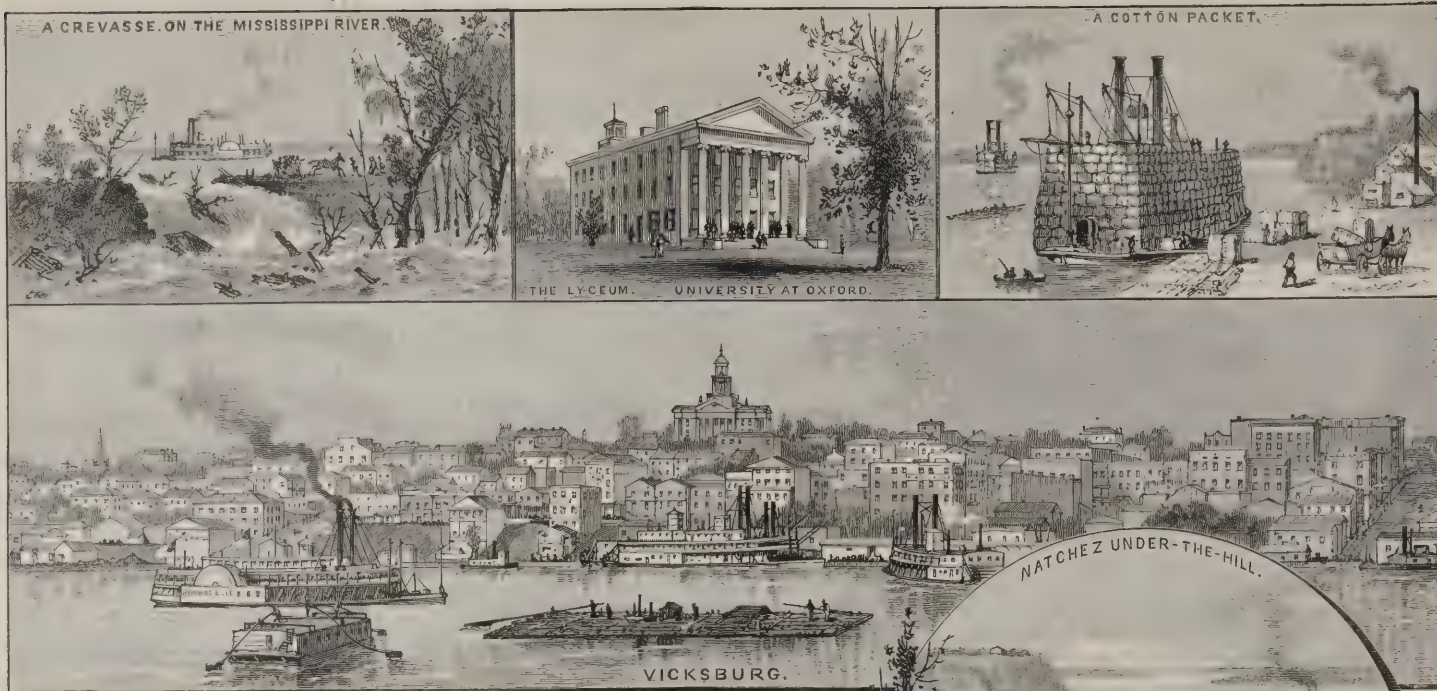
To what are its principal rivers tributary? What large river crosses the state? How far is it navigable? Mention its largest tributary. Mention the largest river between the Arkansas and Red rivers.

What minerals are found in this state? (*See small chart.*) Where is the mineral region? Mention the other products.

What is the mean annual temperature of the northern part of the state? How does it compare with that of East Tennessee?

In what part of the state is Little Rock?—Fort Smith?—Helena?—Hot Springs? Which is the capital? On what river is it situated?

Map Drawing.—Draw a map of this state, as directed on page 37. How wide is this state, from east to west?



42. **Alabama** is almost wholly in the Gulf Slope. Its mineral and grazing regions are in the mountains and valleys of the north; its agricultural region is in the middle; and its forest belt, in the south. Cotton, corn, coal, iron, lumber, and turpentine are extensively produced.

43. *Montgomery*, the capital, is a railway center and cotton market.

44. *Mobile* (mō beel'), the largest city and sea-port, is the center of an extensive trade in cotton and lumber.

45. **Mississippi** has a level surface and a fertile soil. In the production of cotton, it excels every other state in the Union. It produces, also, corn and lumber in large quantities.

46. *Jackson* is the capital.

47. *Vicksburg*, an important river-port, is the largest city in the state.

48. **Louisiana** embraces the delta* of the Mississippi River. Its surface, like that of Florida, is remarkable for its bayous, lakes, and cypress swamps.¹

49. *In commerce*, this is the leading state in the South; while in the production of sugar, it is the first in the United States.²

1. All the soil of Mississippi and Louisiana has been brought down by the Mississippi River. In seasons of low water, the current is slow, and the sediment which the water contains settles to the bottom. Thus the river builds up its banks and bed, higher than the surrounding plain. Floods of water from the rains and melting snow on the Rocky Mountains pour into the channel; the current moves more swiftly, cutting its way through the banks and barriers it had itself placed there, and flowing in a new channel. The main channel at the delta was, for many years, obstructed by an accumulation of sediment. To remedy this, the channel was straightened by jetties, or artificial banks, so constructed as to increase the velocity of the current, thereby forcing the water to clear the channel, or pass, instead of obstructing it. This has resulted in a deep, safe channel. (See *Monteith's New Physical Geography*, p. 71, note 3.) The area drained by the Mississippi River and its tributaries is about 1,244,000 square miles. Steam-boats can ascend this river to St. Paul; and, by way of the Missouri, to Fort Benton.

2. Many of the people of Louisiana are of French descent. These speak the French language, and retain many of their national customs.

50. *Baton Rouge* (băt'un rōōzh) is the capital.

51. *New Orleans*, the metropolis, is the leading cotton market in the world.³

52. **Arkansas**⁴ has highlands in the north-west, from which the surface slopes to the Mississippi River.

3. **New Orleans** is situated on the Mississippi River, about 100 miles above its delta. The older part of the city was built on the left bank of the river, which gave it a crescent shape, whence its familiar title, *Crescent City*. The city now includes Algiers and Gretna, on the opposite bank. The level of the lakes, north and east of the city, is fifteen feet below high-water level of the Mississippi at spring freshets, and the level of the city is from one to four feet below. To protect the city from the annual inundations, there have been constructed high, broad embankments, called levees, extending two hundred miles above and fifty miles below the city. The river levees are from fifteen to fifty feet wide, and are finished along the top so as to furnish a delightful promenade. The lowness of the city level requires the use of powerful steam pumps, which raise and expel all the waste water, sewage, etc., into one of the lakes. The temperature of New Orleans is not extreme, its highest average in summer being 83° F., and its lowest in winter, 52° F.

4. This name is usually pronounced *är kan' sas*; but the legislature of the state has adopted the pronunciation, *är' kan' sa*.

* *deltā*, the tract of land between two mouths of a river.

53. *Its surface*, generally, is diversified with mountains, plains, hills, and valleys.

54. *Its mountains* are rich in coal, iron, lead, and other minerals, and on its plains, cotton, corn, and live-stock are raised. Zinc is largely produced in this state.

55. *In the east*, are marshes, bayous, levees, and dikes.

56. *Little Rock* is the capital and largest city.

57. *Tennessee* is midway between the Great Lakes and the Gulf of Mexico. Its length is nearly four times its breadth. Its area is about half that of Kansas.

58. *It comprises* East Tennessee, Middle Tennessee, and West Tennessee.

59. *Mountains* and long, narrow *valleys*, famous for coal, iron, marble, and other minerals, cover East Tennessee; hills and pastures, celebrated for corn, hemp, tobacco, and live-stock, are in Middle Tennessee; and alluvial* plains, producing cotton and tobacco, cover West Tennessee.

60. *Nashville* is the capital and largest city.

61. *Memphis* is an important cotton market, river-port, and railway center.

5. **Other important Cities.**—In ALABAMA,—*Selma*, *Huntsville*, and *Eufaula* (ū fa' lā) are active produce markets. *Birmingham* is noted for coal and iron mines.

6. In MISSISSIPPI,—*Natchez* is an important river-port. *Columbus* is a cotton market.

7. In LOUISIANA,—*Shreveport* is a cotton and corn market.

8. In ARKANSAS,—*Helena* is a cotton market. *Eu re' ka* and *Hot Springs* are health resorts. *Fort Smith* has a large trade with Indian Territory.

9. In TENNESSEE,—*Chat ta noo' ga* is a river-port and railway center. *Knoxville* is at the head of navigation on the Holston, a branch of the Tennessee River.

10. **Distinguished Men.**—Born in *Louisiana*, John J. Audubon, naturalist; and General Beauregard, soldier: in *Tennessee*, David Crockett, hunter; Admiral Farragut, U. S. Navy; and William H. ("Parson") Brownlow, statesman.

11. **Celebrated health resorts.**—In Arkansas, are hot and mineral springs, celebrated for their curative properties; and in Tennessee, is Lookout Mountain.

12. **Historical Notes.**—*De Soto*, in 1541, discovered the Mississippi River. In 1673, *Father Marquette* (mar ket'), a Jesuit missionary, floated in a canoe down the Wisconsin to the Mississippi, and thence to the mouth of the Arkansas. *La Salle* (lā sāl'), in 1682, explored its valley and took possession of it for the king of France, naming the region Louisiana, in honor of Louis XIV. A permanent settlement was made at Natchez a few years later.



13. *The French* explored the great lakes, the Mississippi River, and several of its tributaries. Jesuit missionaries, in their efforts to convert the Indians, suffered much from hunger, sickness, exposure, and cruelties from the savages whom they sought to benefit. They took long journeys on foot, along the shores of the lakes and through the forests, at the risk of health and life. Some were scalped; some, scalded with boiling water; some, burned in rosin fire; and many were murdered. Their places were, however, promptly filled by others.

14. *Louisiana* was, therefore, a vast territory belonging to France and embracing all the land west of the Mississippi not then included in Mexico. The control of the Mississippi River, and the possession of this territory were so important to the United States, that this government purchased it from France in 1803, for fifteen million dollars.

15. *Arkansas* was a part of French Louisiana, which was purchased in 1803, by the United States. It became a portion of Missouri Territory in 1812, was organized as a separate territory in 1819, and admitted as a state in 1836.

16. *Tennessee* was permanently settled in 1754, by people from North Carolina, of which this region formed a part. The region was known, at different times, by the names: District of Washington,—the State of Franklin,—the U. S. Territory south of the Ohio. Tennessee became a separate territory, and in 1796, a state.

al la' vi al, composed of deposits of sand, clay, or gravel, made by river action.



TEXAS AND INDIAN TERRITORY.

TEXAS.

Location.—In what part of the United States is Texas? Mention its natural boundaries. What country does the Rio Grande separate from Texas? What does the Red River separate from Texas?—the Sabine? What states border on Texas?—what territories? By what is Texas bounded on the extreme north? What parallel forms the northern boundary of this state? Between what meridians is Texas?

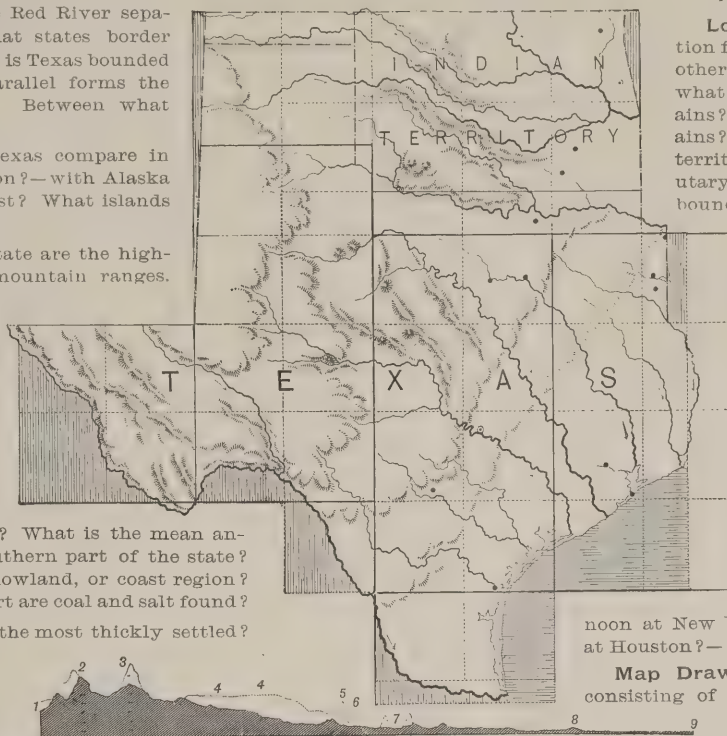
Size and Outline.—How does Texas compare in size with the other states of the Union?—with Alaska Territory? What bays indent the coast? What islands along the coast?

Surface.—In what part of the state are the highlands?—the lowlands? Name two mountain ranges. What high plateau in the north-western part? What is its height above the level of the sea? Name three large rivers wholly within the state? What large tributary has the Rio Grande? In what direction do these rivers flow?

Climate and Products.—What part of the state has the mean annual temperature of 56°? What is it in New Mexico at the same latitude? What is the mean annual temperature in the extreme southern part of the state? What are the chief products of the lowland, or coast region?—of the midland region? In what part are coal and salt found?

Cities.—Which part of the state is the most thickly settled? Name and locate the largest city,—the capital,—the chief sea-port.

* Public Land is so called because it has neither a state nor a territorial form of government. It is held by the United States government, as unsurveyed land.



1. Rio Grande,—2. Hueco Mts.—3. Guadalupe Mts.—4. Llano Estacado,—5. Double Mt.—6. Kiewit Peak,—7. Caddo Peaks,—8. Limestone Hills,—9. Sabine R.

Where is Dallas?—Houston (*hūs'ton*)?—San Antonio? To what country did Texas formerly belong? How did it become a part of the United States? (See note 4.)

INDIAN TERRITORY.

Location and Surface.—In what direction from Texas is Indian Territory? What other states border on this territory? In what parts of the territory are its mountains? Where are the Wichita (*wich'itg*) Mountains? What two rivers flow through the territory? Of what is the Arkansas a tributary? What river forms the southern boundary?

Population, Products, etc.—By whom is this territory chiefly inhabited? What and where is its capital? Where is Vinita?—McAllister?—Muskogee? What part of the territory produces grain?—live-stock?

Commercial Geography.—Mention and locate a sea-port of Texas,—two railway centers. Which of these export live-stock?—sugar?—cotton?—lumber? With what sea-ports has Galveston steam-ship connection? What kind of a cargo would a vessel take from Galveston to New York? In what time-belt is nearly all of Texas? When it is

noon at New York, what is the hour (standard time) at Houston?—at El Paso?

Map Drawing.—Draw on a construction-frame consisting of four oblong measures, a map of Texas and Indian Territory, as directed on page 37. What is the distance across Texas, from east to west?—from north to south?

59. Texas is the largest state in the Union. It is more than three times the size of Kansas.

60. The north-western part of the state is a high and mountainous plateau. From this, the surface slopes toward the Gulf of Mexico, along which it is low and level, with sandy and marshy tracts.

61. The coast is skirted by long, narrow islands, which partly inclose a series of sounds, or lagoons.

62. The eastern part of the state, and the river valleys, are covered with forests.

63. The prairies of central Texas afford abundant pasturage. In the number of its cattle, Texas excels every other state in the Union.

64. The lowlands along the coast yield rich harvests of cotton and sugar-cane.

65. Austin, on the Colorado River, is the capital.

66. Gal'veston, the metropolis, is a sea-port.

67. Indian Territory is a tract of land set aside by

Congress for the exclusive use of certain tribes of Indians. Its surface, soil, and productions are similar to those of the northern part of Texas.

68. The largest and most important tribes are the Cher'okees, Chock'taws, Chick'a saws, Creeks, and Seminoles—all called civilized tribes. Each tribe occupies a portion of territory, over which it has exclusive control.

69. The people of these tribes are industrious, and many of them are wealthy farmers and stock-raisers. They make their own laws and administer their own government. In several towns, schools have been organized, and fine public buildings erected.

70. Tah'lequah' is the capital and most important trading-post.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about the Southern States, as directed on page 43.

A TOPICAL DIAGRAM.

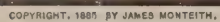
Each pupil may prepare a Written Exercise on the Southern States, as shown on page 43.

1. Other important Cities.—San Antonio is the commercial center of Western Texas: one third of its population is Spanish. Houston is a railway and manufacturing center. Dallas and Brownsville are grain and cattle markets.

2. Historical Notes.—Parts of Texas were explored as early as 1680. Settlements were made at Matagorda Bay in 1685, but the first permanent settlement was not made until about a century later.

3. San Antonio was founded in 1693. Other missions were established in various parts of the country.

4. Texas was under Mexican rule until 1835, when it became a republic. A war followed, in which General Sam. Houston, at the head of the Texan army, defeated the Mexicans at San Jacinto. Here Santa Anna, the Mexican commander, was taken prisoner. Texas was annexed to the United States in 1845.



THE NORTH CENTRAL STATES (EASTERN SECTION).

GENERAL QUESTIONS.

Location.—What six states are comprised in the eastern section of the North Central States? What is the northern boundary of that section?—its western boundary? Which states border on the Great Lakes?—on the Mississippi River?—on the Ohio River?

Latitude and Longitude.—What is the latitude of the most northern boundary?—of the most southern? Through how many degrees of latitude does this section extend? In which part are the longest days? What is the longitude of its eastern boundary?—of its western?

Outline.—Mention four lakes,—three bays. Into what waters do the bays open?

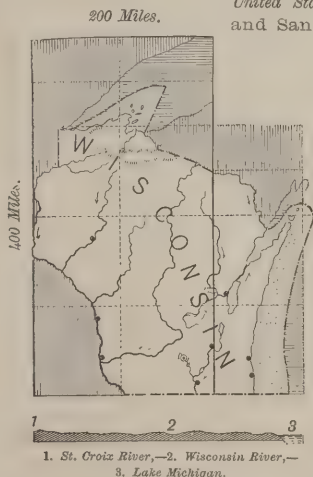
Surface.—Which of these states contain mountains? What divide, or water-shed, extends through the northern part of this section? What states are crossed by it? Into what do most of the rivers in these states flow? Which is the principal river? Where and what is its source?

Climate and Products.—How does the temperature compare with that of Colorado?—of Wyoming? What are the principal products?

Cities.—Mention and give the location of the two most important cities in these states?

Commercial Geography.—Mention four railroad centers. Mention three lake ports. (See physical chart.) Going from Chicago to Cincinnati by railroad, through what cities would you pass? From what places can lumber be shipped?—grain and cattle? From what states of this section can the ocean be reached by two water-routes?

Standard Time.—In what time-division are these states? What is the difference in time between Chicago and Philadelphia?—(See map of the United States),—St. Louis and Denver?—Cincinnati and San Francisco?



WISCONSIN.

In what part of the United States is this state? Mention its natural boundaries. What group of islands north? By what water are they surrounded?

What mountains are in the northern part of the state? Mention two large rivers. To what are they tributaries? What lake in the eastern part of the state? What two rivers, in the central part of the state, are united by a canal? Why?

What minerals are found in the northern part of the state?—in the southwestern part? Where are large forests? In what part is wheat raised?

Mention and locate the metropolis,—the capital. Which are the largest cities

in this state on Lake Michigan?—on Lake Winnebago (*winn'z bi' go*)? Which are the largest cities in the western part of the state?

Map Drawing.—Draw a map of Wisconsin, as directed on page 37. Add to the oblong measure three small squares.

MICHIGAN.

Of what two natural divisions of land does Michigan consist? Which is larger, the northern, or the southern? What three lakes border on the northern division of this state? Which lake is the largest?—the highest? What bays indent the shores of Michigan?

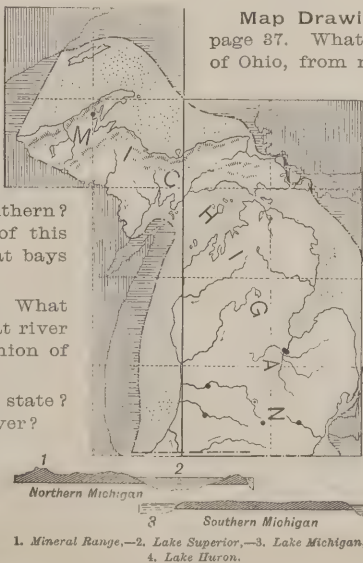
What islands in Lake Huron belong to this state? What strait connects Lake Michigan with Lake Huron? What river forms the boundary between Michigan and the Dominion of Canada?

What mountains in the north-western part of the state? Where are the Pictured Rocks? Where is the Grand River?

Do the waters of this state finally reach the Gulf of St. Lawrence, or the Gulf of Mexico? What are the principal products of Michigan?

Mention and locate the capital,—the largest city. Where is the city of Grand Rapids?—Bay City?—East Saginaw?—Jackson?

Map Drawing.—Draw a map of Michigan, as directed on page 37.



ILLINOIS.

Mention the natural boundaries of Illinois. Where is its lake boundary? Where are its river boundaries? What states border on Illinois?

Is the surface of this state mountainous, or level? What lakes in this state? Toward what do the rivers flow? In what general direction? Mention the principal river. What two rivers unite and form it? Where is the Rock River? How can you go by boat from Michigan to the Gulf of Mexico?—to the Gulf of St. Lawrence? (See also map on page 34.)

What is the mean temperature of the northern part of the state?—of the southern part? In what part is coal found? What is the leading occupation in the central part of the state? What is raised in the southern part? What is the capital?—the metropolis? Where is Peoria?—Quincy?—Springfield?

Map Drawing.—Draw map of Illinois, as directed on page 37. What is the length of Illinois?—its width?



INDIANA.

Between what states is Indiana? What lake north? What river forms its southern boundary? Of what is it a branch? What parallel of latitude crosses the central part of Indiana?—what meridian? What is the length of the longest day near the parallel of 40° north latitude?

Where is the highest land in the state? In what direction does the surface slope? What river crosses this state and forms part of its boundary? Where does it rise? What branch has it in the southwestern part of the state?

To what pursuit is the principal part of this state devoted? What mineral is found in this state?

What is the capital? In what part of the state is it? Where is Evansville?—Ft. Wayne? What large cities on the Wabash River?

OHIO.

By what two routes can the ocean be reached by boat from Ohio? In what direction would you travel from the state capital to Lake Erie?—to the Ohio River?

In what part of the state is its highest land? What river forms the southern boundary of Ohio? Mention a river which flows into Lake Erie,—two which flow into the Ohio River.

Where is coal found? What three cities are lake-ports? Which is the largest? Mention the metropolis. Where is it situated? Mention the capital. Where is it? Where is Dayton?—Springfield?

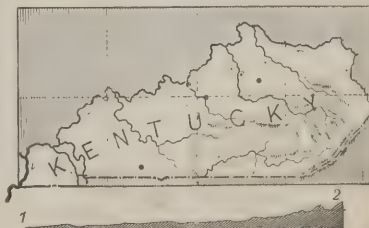
Map Drawing.—Draw a map of Indiana and Ohio, as directed on page 37. What is the extent of these two states, from east to west?—of Ohio, from north to south?—of Indiana?

KENTUCKY.

What water boundaries has Kentucky? What other natural boundary has it? What three states north of Kentucky?—two east?—one south?—west? Into what do its principal rivers flow? Mention them. From what does the Mississippi River separate Kentucky?—the Ohio River?—the Big Sandy River?

What natural curiosity near the Green River? Which is the most mountainous part of the state?—the coolest?

Mention its principal products,—its capital,—its largest city. Where is Covington?—Newport?



Map Drawing.—Draw a map of Kentucky, as directed on page 37.



THE NORTH CENTRAL STATES.

1. **Position.**—This group of states occupies the north central region of the United States, extending from the eastern boundary of Ohio to the western boundary of Dakota, and from Tennessee to the Dominion of Canada. Its latitude is the same as that of France and Spain.

2. **Surface.**—The greater part of the surface is level, or prairie land. The south-eastern part reaches to the Cumberland Mountains, and its western, almost to the Rocky Mountains. The northern part is crossed by the Height of Land, which constitutes the divide between the Arctic Slope and the Gulf Slope.

3. *The elevation increases toward the north-west, where the average elevation is about 4,000 feet. The hills and rolling surface give place to the rugged terraces of the Black Hills and the Bad Lands.¹ The northern part is situated in the Arctic Slope, and a narrow rim along the border of the Great Lakes lies in the Basin of the St. Lawrence;² but the greater part of the group is situated in the Mississippi Basin.*

1. The **Bad Lands**, or *Mauvaises Terres* (*mô vâz târ'*), are a form of mountains which have been sculptured into shape by running water. The strata composing this part of the earth's crust are of different degrees of hardness; hence, under the erosive action of running water, they are rapidly cut away, leaving

the different strata in the shape of terraces. The *Mauvaises Terres* of Dakota, Montana, and Nebraska are very remarkable. The fossil bones of the rhinoceros and many extinct animals have been found in this section.

2. The **divide** separating the Basin of the St. Lawrence from that of the Mis-

4. **Lakes.**—The Great Lakes constitute the largest collection of fresh water in the world.³ They furnish to the United States more than 2,000 miles of coast.

5. **Rivers.**—No other part of the continent contains so many rivers. Excepting the Red River of the North, and a few short streams flowing into the Great Lakes, all the rivers of this group are tributaries of the Mississippi.

6. **Soil.**—The soil throughout almost the entire region is rich, and well adapted to the cultivation of grain. Much of it, especially along the river bottoms, is alluvial.

7. **Climate.**—In the northern part, the average* winter temperature is lower than that of any other country in the same latitude. The climate, however, is dry, pure, and noted for its healthful qualities.⁴ In the southern part, the winters are mild, and the summers are hot.

8. *The rain-fall*, each year, varies from twenty-five inches in the north-west, to fifty-five inches in the south-east. Nearly all the storms passing over these states originate* in Montana and Dakota, and travel eastward. During the summer months, destructive, whirling storms, commonly known as cyclones and tornadoes, are prevalent. (See page 18.)

9. **Vegetation.**—Wild grasses afford an abundance of pasturage for cattle and sheep. Berries, wild plums, cherries, and other edible fruits, are abundant.

10. *The timber belt* of the northern part of the United States extends as far west as Dakota. White pine is the most abundant. Oak, maple, hickory, birch, black-walnut, hemlock, elm, cedar, and tam' a rack are also common.

11. *West of the Mississippi River*, large tracts of country are destitute of timber, save occasional growths of cotton-wood and willows along the river bottoms.⁵

12. **Animals.**—The beaver, otter, mink, muskrat, and other fur-bearing animals, are still common in the northern regions. Bisons,* until recently, were numerous on the plains; but they are now seldom seen south of Canada.⁶ The fox and prairie-dog are still found in the western part, but all of the larger wild animals are rapidly disappearing.

13. **Minerals.**—The chief minerals are bituminous coal and iron, both of which are widely distributed. Salt, copper, lead, and zinc are abundant in the vicinity of the Great Lakes. Gold and tin are found in the Black Hills.

Mississippi River is, in places, three or four miles from the shores of the Great Lakes. Water lifted less than seven feet from the level of the Chicago River is poured into a canal that connects the Great Lakes with the Illinois River.

3. **The walled lakes** of this region are the work of glacial ice in a former period. It is thought that the rocks forming the walls of the lakes were pushed into position by the expansive force of ice.

4. **In the vicinity of the Great Lakes**, the climate is moist, and raw, damp winds prevail. In winter, there are occasional storms of wind and snow, known in these states as blizzards. During a storm of this character, the velocity of the wind may exceed fifty miles per hour, and the temperature fall to forty degrees below zero. Owing to the extreme dryness of the air in the north-west, persons do not realize the intense cold sometimes indicated by the thermometer.

5. **The absence of growing timber** in this region has been a great detriment to its settlement. Congress and the state legislatures have encouraged the planting of trees in these regions, and, for the future, there is promise of a plentiful supply of growing timber.

6. **The disappearance of the bison** from the plains is due to wanton slaughter.

14. **Industries.**—Agriculture is the leading employment, and the one on which all other industries depend.

15. *Stock-raising* is extensive. These states are celebrated for fine horses and cattle. The raising of hogs is a considerable source of profit.

16. **People.**—These states were settled by people from other states. There are, however, many British, Germans, Swedes, and Norwegians among the present population.

17. *The manufactures* include agricultural implements, flour, lumber, and furniture. Car building and the smelting of ores are extensively carried on.

18. *The commercial interests*, although generally restricted* to the handling of the products of the farm and the mine, are important.⁷

19. **The northern part of Wisconsin** is situated in the St. Lawrence Basin, and the southern part, in the Mississippi Basin. Its surface is undulating, and in the north, somewhat rugged, being crossed by the ridges which constitute the divide of the St. Lawrence Basin. The state is dotted with a multitude of small, beautiful lakes.

20. *Grain-farming and dairying* are the principal industries. The lumber region is confined, chiefly, to the river courses in the northern part. Wisconsin is a leading state in the production of lead.

21. *Madison*, the capital, is a railway center. It contains one of the finest capitol buildings in the north-west.

22. *Milwaukee* is the chief commercial center and grain market of Wisconsin.

23. **Michigan** is about three fourths the size of Kansas, and comprises two peninsulas. The upper peninsula is rugged and hilly; the lower, comparatively level. Michigan has a greater extent of coast than any other state.⁸

24. *Michigan excels* every other state in the Union, in the production of lumber, copper,⁹ salt, and the value of its iron ore. The copper mines near Lake Superior yield about one fifth of the world's product.

25. *Lansing*, the capital, is the center of a rich agricultural region.

26. *Detroit*, the metropolis, has the finest harbor on the Great Lakes. It is a manufacturing and commercial center.

Until recently, about 100,000 a year were killed for the mere sport of hunting them. There are still a few herds on the grass covered plains of Canada, but they are never seen on their former herding-grounds in the United States.

7. **The country** is covered with a net-work of railways. Trunk-lines connect the cities of these states with every important sea-port and metropolis on the continent. No state in this section has any sea-coast; but nearly all the large cities have direct communication with foreign countries, either by way of the Great Lakes and their system of canals, or by the Mississippi River and its tributaries.

8. **Pictured rocks**, on the northern shore of the upper peninsula, are fine examples of the wearing action of water. The sandstone, which is composed of differently colored strata, has been worn into fanciful resemblances of castles, fortifications, and sculptured columns.

9. **The ancient ruins and excavations** show that the mound-builders worked both the copper and the iron mines. Stone hammers and other implements used by them are found covered with the slag of copper ore.

* *ā' er age*, mean proportion of.
re strict' ed, limited.

o *nā' i nāle*, to begin.

U' son, an animal commonly called the buffalo.



EVENING SCENE IN CARFIELD PARK, CHICAGO.



GRAIN ELEVATORS & LAKE SHIPPING, CHICAGO.



HARVESTING CORN, OHIO.



IRON WORKS & TOW BOATS ON THE OHIO.



ON LAKE ERIE OFF CLEVELAND.

27. Illinois has nearly three fourths the area of Kansas. It is about equal in size to England and Wales. The surface is a vast plain sloping to the south-west, with occasional bluffs, or hills, along the rivers.

28. Illinois is the first state in the production of *grain* and *horses*. It is also famous for fine breeds of cattle.

29. *The coal-fields*¹ extend over nearly three fifths of the state. Lead is abundant in the northern, and salt in the southern part. There are large quarries of excellent limestone throughout the state.

30. *Nearly one half the people* are engaged in agricultural pursuits. The packing of pork and the canning of meat are industries of great importance.

31. *Springfield*, the capital, is a railway and manufacturing center, and an important grain market.

1. The coal of Illinois, Indiana, and other states of the Mississippi Valley, is bituminous, or soft, coal. These coal-fields are estimated to cover an area of 30,000 square miles. The limestone of this region is fine grained and susceptible of beautiful finish. Under the name of "Athens marble," it is much used as an ornamental facing for the mammoth buildings of Chicago.



HUNTING PRAIRIE GROUSE.



GRAPE CULTURE IN OHIO.

APPLE ORCHARD IN INDIANA.

SPECIAL GEOGRAPHY OF INDIANA.

[CLASSES IN INDIANA MAY NOW READ, OR STUDY, THE GEOGRAPHY OF THIS STATE.]

1. **Position.**—Indiana is situated between $37^{\circ} 47'$ and $41^{\circ} 46'$ north latitude, and between $84^{\circ} 41'$ and $88^{\circ} 6'$ west longitude. Its average length is about 260 miles; its average width, about 150 miles. Its area is 36,350 square miles; and its population, according to the census of 1880, was 1,978,301.

2. *It is bounded* on the north, by Lake Michigan and the State of Michigan; on the east, by Ohio and the Great Miami River; on the south, by the Ohio River, which separates it from Kentucky; and on the west, by Illinois and the Wabash River.¹

3. **Surface.**—The surface, generally, is a plain. It contains no elevations which can be called mountains.

4. *Northern Indiana* is an almost continuous plain. A few elevations border the Wabash in some parts of its course, and in the immediate vicinity of Lake Michigan are found extensive sand-hills. It is probable that much of this section was, at a very remote time, covered by the waters of the lake. The central and eastern portions of this section were originally covered with forests interspersed with small prairies. The prairies cover about one eighth of the entire surface of the state.

5. *Central Indiana* is undulating, being slightly broken in its western, southern, and south-western parts. But little of its surface is so uneven that it can not be properly tilled.

6. *Southern Indiana*, compared with the other parts of the state, is very broken. While none of the hills rise more than 500 feet above the surface of the adjacent valley, in many of the counties the appearance of the country is rugged and almost mountainous. The river counties are especially broken. A range of hills extending northward from New Albany, and known as The Knobs, is the most important range in the state. Broken as this section is, by far the larger part of it is susceptible of cultivation, and some of its counties are among the richest in the state.

7. *The lowest point in the state* is the south-western part of Posey County, called The Pocket, it being only 300 feet above the sea-level.

8. *The highest point* is Weed Patch Hill, in Brown County. Its elevation is 1,147 feet above the sea-level.

9. **Lakes.**—Lake Michigan, which forms the north-western boundary of the state, is the only lake that is of any commercial value to the state. There is a good harbor at Michigan City.

10. *Small lakes* dot the northern part of the state. The larger ones cover from one to ten square miles of surface, and are quite deep, but a large majority are shallow. Nearly all abound in fish. English Lake, the largest of these, is an expansion of Kankakee River.

11. **Rivers.**—The rivers belong principally to the Mississippi System.

12. *The Ohio*, which is the most important, is usually navigable throughout the year. It furnishes a direct outlet to the counties which border upon it. The Falls of the Ohio are between Jeffersonville and New Albany, the descent being twenty-two feet in the space of two miles. When the water in the river is high, boats can pass over these rapids, but a lock canal on the Kentucky side enables boats to pass at any season.

13. *The Wabash River* is the largest and most important within the state. With its tributaries, it drains nearly three fourths of the state. It is navigable in high water as far as La Fayette, and small boats sail up as far as Terre Haute, during a greater part of the year.

14. *White River*, the largest tributary of the Wabash, has two main branches—the East Fork and West Fork—which drain the central part of the state. The East Fork, in the upper part of its course, is called the Blue River.

15. *Other tributaries of the Wabash* worthy of mention are the Tippecanoe, Eel, and Mississinewa.²

16. *Whitewater River*, a large stream in the south-eastern part of the state, flows into the Great Miami near its mouth.

17. *The Kankakee* finds its way to the Mississippi, through the Illinois River. Its current is sluggish, and in rainy seasons, it overflows its banks for many miles. Its chief tributary is the Iroquois.

18. *The rivers which belong to the St. Lawrence System* are the Calumet, the St. Joseph, and the Maumee.

1. Usually, when a river separates two states, its center is the dividing line; in this case, Indiana's southern boundary is low-water mark on the Indiana side. This is owing to the peculiar language used by Virginia in ceding the North-west Territory to the United States. The statement is, "*the territory north-west of the Ohio River.*" The western boundary line is one drawn along the middle of the Wabash River,

from its mouth to a point where a line drawn due north from the city of Vincennes, last touches the shore of the Wabash, and from this point due north till it intersects the northern boundary line in Lake Michigan.

2. **Lost River** is remarkable in having about eight miles of its course under ground. It is, therefore, said to be lost.

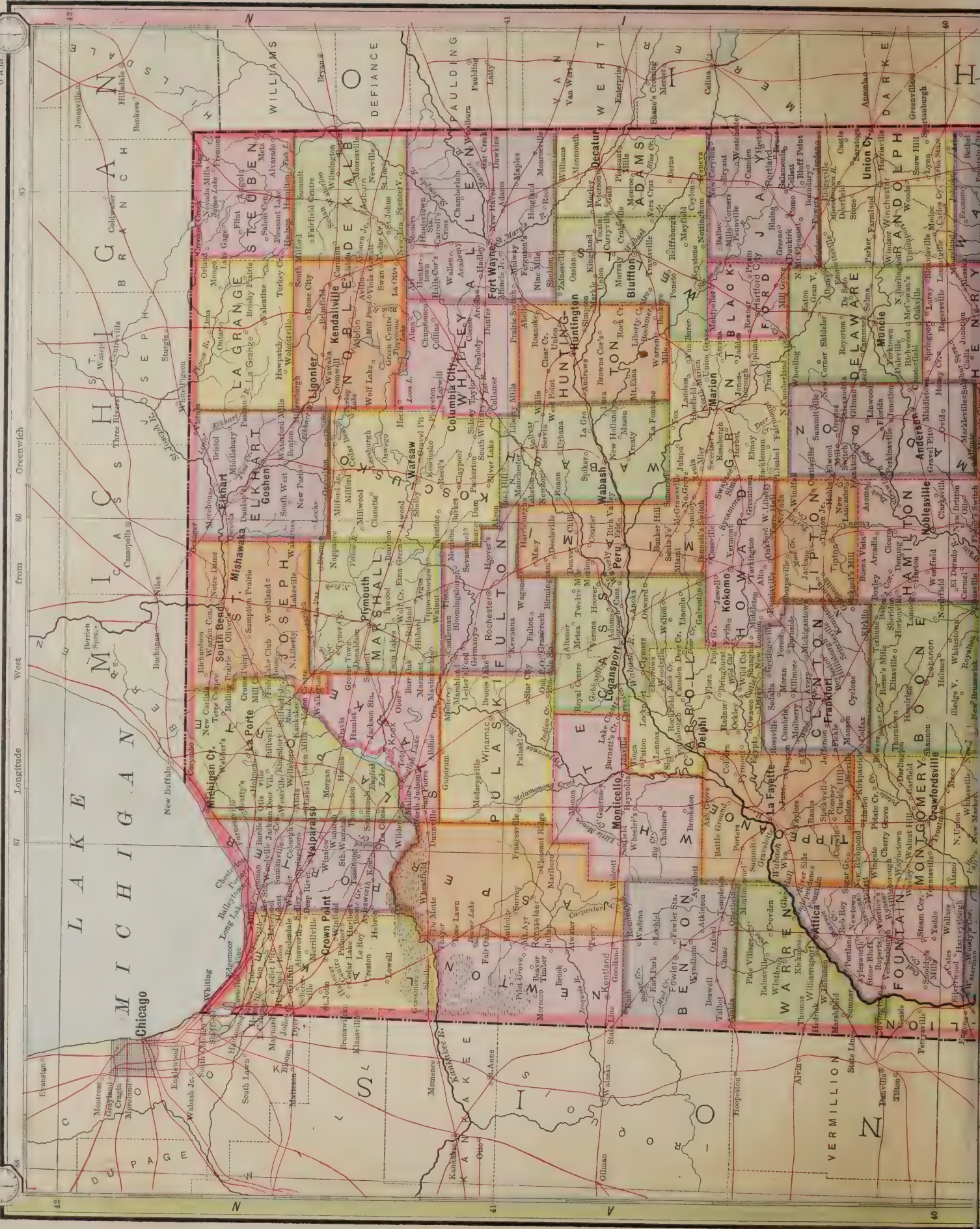


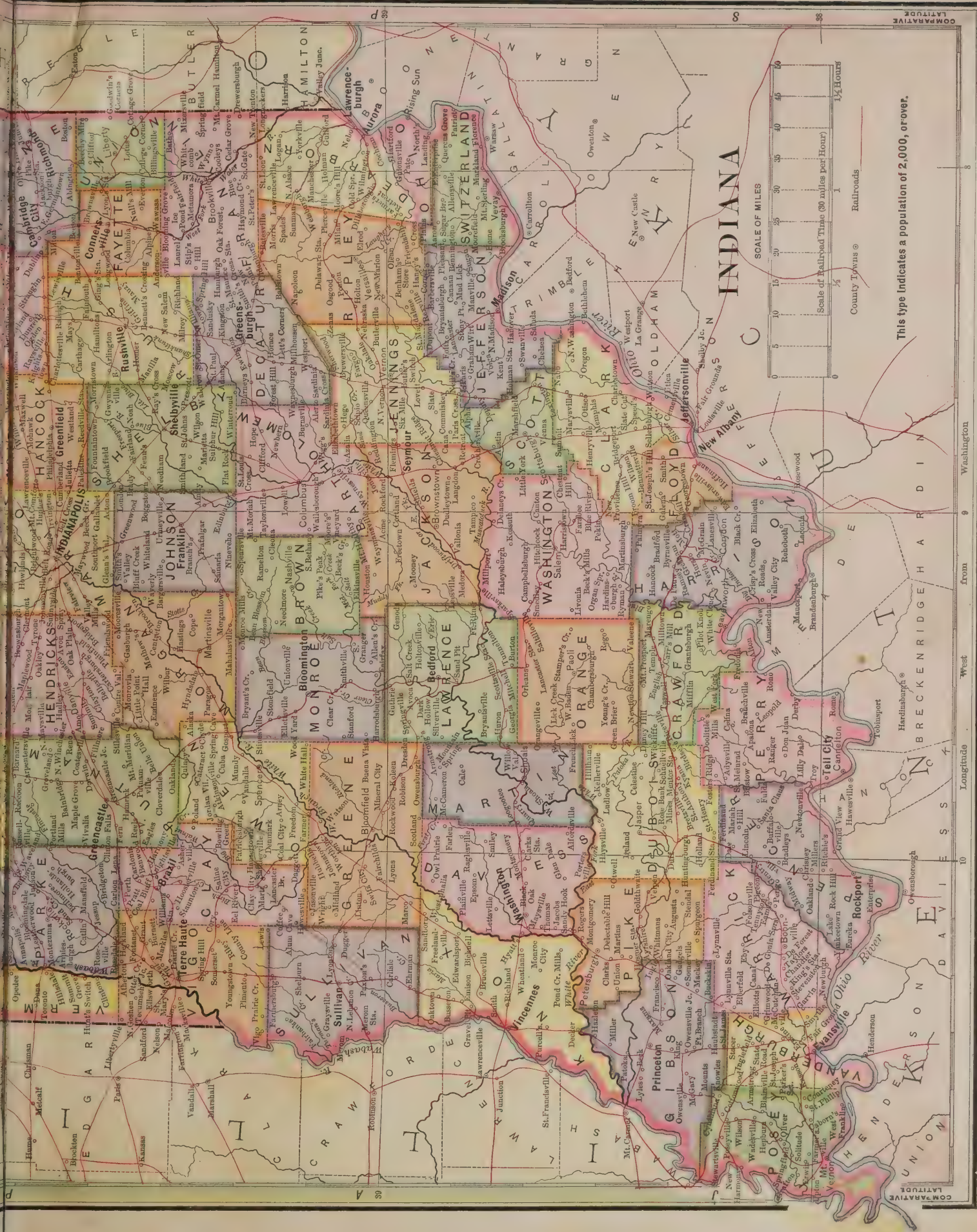
6 AM



6 AM

STANDARD TIME WHEN NOON AT LONDON.





This type indicates a population of 2,000, or over.

19. *The most noted springs* in the state are the West Baden and French Lick, in Orange County; the chalybeate springs, in Putnam County; the Indian and Trinity springs, in Martin County; and the springs of Harrison County.³ One of these, a few miles west of Corydon, known as Wilson's spring, is sixty feet in diameter, and sends forth a stream of water sufficient to run a large mill.

20. *Wyandotte Cave*, in Crawford County, is one of the most remarkable natural curiosities in the world.⁴

21. **Soil.**—Nearly all the land in Indiana is fertile. The most broken parts of the southern counties, the sandy barrens and dunes in the neighborhood of Lake Michigan, and the swamp lands in the Kankakee region, are the least productive tracts. Most of the river bottoms are especially fertile.

22. **Climate.**—The climate of Indiana is variable.

23. *The mean annual temperature* is about fifty-four degrees Fahrenheit. The average winter temperature is about thirty degrees Fahr., and the summer, seventy-two degrees Fahr. The difference between the average temperature in the northern and in the southern part of the state is about eight degrees, and the difference in the seasons for planting and harvesting is from two to three weeks. A change in temperature of thirty-eight degrees has been known to take place in twenty-four hours. In the southern part of the state it is more, and in the northern part of the state less, than this amount.

24. *The mean annual rain-fall* at Indianapolis, is about forty-seven inches.

25. *The prevailing winds* are from the south-west, varying to the south in the summer, and to the west and north-west in the winter.⁵

26. **Vegetation.**—The forests are rapidly disappearing. The most valuable of the native trees are the black walnut, oak, ash, maple, elm, hickory, poplar, and beech.

27. *The black walnut timber* of Indiana and its immediate vicinity is the best in the United States.

28. *Pines* are met with in the north-western part of

the state; *cypress*, in the south-western; and *tamarack*, in marshy regions.

29. *The fruits* comprise apples, pears, grapes, and peaches. The latter flourish best among the hills in the southern part of the state.

30. **Minerals.**—Coal is found in the south-western part of the state, in great abundance.⁶ The coal measures cover an area of about 6,500 square miles, or one fifth the entire state.⁷

31. *Bog iron ore* is found in the marshes of Northern Indiana, and several other varieties of ores are found in the counties embraced in the coal region.

32. *Some of the finest quarries of building stone* in the West are found in Central and Southern Indiana. *Porcelain clay* is found in great abundance in Lawrence County.

33. *A peculiar kind of sand*, out of which plate-glass is made, is found in Clark County.

34. *In the limestone regions* of the south, are some remarkable and interesting caves.

35. **Industries.**—In the raising of grain and live-stock, Indiana is one of the leading states in the Union.⁸

36. *As a manufacturing state*, Indiana ranks high. The manufactures include iron, lumber, flour, woollens, machinery, railway-cars, furniture, etc. Every city and all the larger towns contain manufacturing establishments.⁹

37. **Commerce.**—Commerce is a large and rapidly growing interest. The railroads, in connection with steam-boat lines on the Great Lakes north and the Ohio River south, furnish great facilities for interchanging and transporting the vast resources of the state.¹⁰

38. *The principal exports* from the state are grain, hay, live-stock, provisions, flour, meats, potatoes, tobacco, dairy-products, fruit, and timber.

39. **Government.**—The executive officers are a Governor and Lieutenant-Governor, each elected for four years, but not eligible to a second consecutive term of office, a Secretary of State, an Auditor, a Treasurer, an Attorney-General, and a Superintendent of Public Instruction, each elected for two years.

3. There is a singular spring in Porter County, situated on a water-shed. A part of its water finds its way into the Gulf of St. Lawrence, and a part into the Gulf of Mexico.

4. The galleries and chambers of Wyandotte Cave are very extensive. One room, called Mammoth Hall, is 350 feet long, and contains Monument Mountain, 175 feet high. Among other beautiful rooms is Beauty's Bower, the walls of which are covered with exquisite gypsum rosettes as white as snow.

5. In the southern part of the state, the snow lies on the ground but a few hours, and at most, but a few days, and there is no sleighing. In the central part, more snow falls, but sleighing seldom continues more than a few days at a time. In the northern part, sleighing for two consecutive months is not unusual.

6. A line drawn from Rome, in Perry County, to Spencer, in Owen County, thence through Attica to the northern boundary of Warren County, will indicate very closely the eastern boundary of the coal-fields.

7. This is about one thirtieth of the entire coal area of the United States, and is equal to two thirds the coal area of Europe. The depth of the measures is from 600 to 800 feet, with from twelve to fourteen distinct seams of coal. These seams vary in thickness from one foot to eleven feet. The coal is all bituminous, exhibiting three well-marked varieties—caking, non-caking or block, and cannel.

The cannel coal is found chiefly in Daviess and Perry counties. Peat is found in large quantities in many portions of the northern part of the state, but owing to the abundance of wood, it is not much used.

8. Indiana is now supporting a population of about sixty persons to the square mile, or about 2,000,000 people, while what it produces is sufficient to support 5,000,000. Massachusetts, with thin soil, but with skilled labor, supports 200 persons to the square mile. By comparison with Europe and India, which, with less productive soil, support from 300 to 400 persons to the square mile, Indiana is capable of supporting a population of 17,000,000. In proportion to its area, Indiana produces more wheat and corn than any other state in the Union.

9. With its 2,000,000 inhabitants, Indiana is producing more useful machinery with which to save manual labor, create wealth, afford comfort, and advance civilization than is all Asia, with its 800,000,000 population.

10. The railroads of Indiana are greater in extent, in proportion to its area, than those of any other state. Owing to its level surface and its position between Lake Michigan and the Ohio River, nearly all the trunk-lines, connecting the Pacific with the Atlantic Coast, pass through it. The canals, which, before the time of railroads, were indispensable to the commerce of the state, are now generally abandoned, except for water-power.

40. *The legislative power* is vested in a Senate and a House of Representatives, together called the General Assembly. The senators are elected for four years, representatives for two years. The legislature is allowed to meet but once in two years, and then to continue in session but sixty-one days. In case of an emergency, the Governor may call an extra session.

41. *The judicial power* is vested in a Supreme Court of five judges, elected for six years, and in forty-five circuit courts, with one judge to each. In addition to these, superior courts have been established in several of the larger cities.

42. **Education.**—The school system comprises public schools, graded and ungraded, a State University at Bloomington, a State Normal School at Terre Haute, Purdue University (industrial) at La Fayette, Township Institutes, County Institutes, and State Teachers' Association.

43. *It is under the supervision* of the State Superintendent of Public Instruction, the State Board of Education, County Superintendents, and City, Town, and Township Trustees.

44. *Other public institutions* include those for the Blind, Deaf Mutes, and the Insane, at Indianapolis, which contains, also, the Girls' Reformatory; the Boys' Reformatory, at Plainfield; and the Home for Soldiers' Orphans, at Knightstown.

45. *The State University* receives the graduates of the high schools, male and female, and is free to all.

46. *Purdue University* is the state agricultural and mechanical school, embracing schools of natural science, engineering, agriculture, etc.

47. *The state contains* several denominational universities and colleges, among which are Asbury (now De Pauw), Wabash, Butler, Earlham, Hanover, and Moore's Hill.

48. **Principal Cities.**—*Indianapolis*, the capital of Indiana, is situated on the White River, in almost the exact geographical center of the state.

49. *Evansville*, the Crescent City, was founded in 1817. It is an important commercial and manufacturing center, its wholesale trade being very large. Abundant coal-beds and plenty of timber are near it. It is the second city in population in the state.

50. *Fort Wayne*, the Summit City, was originally an Indian village of about thirty wigwams, called Ke ki' on ga. It was the scene of many battles with the Indians. It has been for years the commercial metropolis of North-east Indiana.

51. *Terre Haute*, which means *high land*, is situated on a bluff of the Wabash, fifty feet above low-water mark. Its nearness to the best of coal gives it great advantages as a manufacturing center. Its blast furnaces are very extensive.

52. *New Albany* is situated at the foot of the Falls of the Ohio. It is shut in on the north and west by the Silver

Hills, which rise to the height of 300 or 400 feet. From the top of one of these, just below the city, may be had one of the finest views in the Ohio Valley. The most extensive plate-glass works in the United States are located here. This glass is regarded as almost equal to the fine French plate. New Albany is the seat of De Pauw Female College.

53. *La Fayette* is a flourishing railroad center, and one of the most enterprising cities in the state.

54. *South Bend*, situated on the great south bend of the St. Joseph River, is specially noted for the number and extent of its manufacturing establishments. Its wagon works are the most extensive of the kind in the world. It is the seat of Notre Dame University and St. Mary's Academy.

55. *Richmond* contains some of the largest manufacturing establishments in the country, and is the county seat of one of the most highly cultivated counties in the state.



56. *Logansport*, situated on the point of land made by the junction of the Eel River with the Wabash, received its name from the Indian chief, Logan, a firm friend of the white settlers. It is an important shipping point for grain, lumber, pork, etc.

57. *Madison*, on the Ohio River, is pleasantly situated in a valley which is elevated above the highest floods, on the north of which are steep hills nearly 400 feet high. Its manufactures include flour, furniture, engines, and steam-boats.

58. *Jeffersonville* is opposite Louisville, at the head of the Falls of the Ohio. The city is built on elevated ground, which commands a fine view of the river and of Louisville. It contains extensive car-works, ship-yards,

foundries, and machine-shops. It is the site of the Southern State Prison.

59. *Vincennes*, on the east bank of the Wabash River, is an important railroad center. Steam-boats ascend the river to this city. Its principal manufacture is flour. This is the oldest town in the state. It was settled by French emigrants from Canada. These people lived, for several generations, on friendly terms with the savages of surrounding forests. Vincennes University is the oldest school in the state.

60. *Michigan City*, on Lake Michigan, manufactures railroad-cars, furniture, lumber, wagons, boots and shoes. Its trade in lumber and white fish is considerable. Here is located the Northern State Prison.

[The classes may now resume the regular course, on page 69.]

11. **Other important Cities.**—*Elkhart*,—superior water-power; important manufactures. *La Porte*,—situated in the midst of a group of beautiful lakes; extensive ice trade. *Peru*, on the Wabash River,—contains woolen and other mills. *Crawfordsville*,—a railroad center; seat of Wabash College, which is under the control of the Presbyterians. *Lawrenceburg*, on the Ohio River,—its manufactures comprise flour, furniture, etc. *Goshen*, on the Elkhart River,—is a railroad center; flour, woolen, saw and oil mills, iron foundries, and establishments for the manufacture of furniture and agricultural implements. *Greencastle*,—is the seat of the Asbury University (now De Pauw), which is under the control of the Methodist Episcopal Church. *Valparaiso*,—valuable manufactures; seat of the Northern Indiana Normal School and Business Institute.

12. **Historical Notes.**—The Indians who occupied the territory at the time of its first exploration were of the Miami Confederacy. Their chief towns were Kekionga, Chipkaka, and Wea. The first was on the site of Ft. Wayne; the second, on that of Vincennes; the third, near that of La Fayette. Small stockades were erected by the French at each of these points during Queen Anne's War, and traders and missionaries frequented them from the first. Vincennes claims to have been founded in 1702.

13. *The region of Indiana* was concerned in two of the Colonial Wars and the Revolution.

14. *The Burning of Ft. Miamis* by Sandosket, an Indian ally of the British, in 1745, was an event of King George's War. *Pontiac's Conspiracy*, an event of the French and Indian War, occurred in 1763. The posts at Wea (or Ouiatenon) and at Kekionga (Ft. Wayne) fell into the hands of the Indians. After the overthrow of Pontiac, the British again took possession of these, and also, of Vincennes. At the close of this war, in 1763, the territory was included in that ceded by France to Great Britain.

15. In 1778, in the Revolutionary War, the French inhabitants of Vincennes, instigated by Father Gibault, a patriotic priest, revolted against the British in the absence of the commandant of the fort (Ft. Sackville), and took the oath of allegiance to Virginia. Late in the same year the British again took possession of the post.

16. *Ft. Sackville* was besieged and taken in 1779, by Colonel George Rogers Clarke, a daring young Virginian, who had taken the Mississippi towns of Kaskaskia and Cahokia. His expedition, and especially his capture of the fort at Vincennes, was a very important event of this war, since it seems to have decided the ownership of the vast territory between the Alleghanies and the Mississippi.

17. *After the close of the war*, in 1784, Virginia ceded to the United States all her vast possessions north-west of the Ohio River.

18. In 1787, the territory north-west of the Ohio River (commonly called the North-west Territory) was organized by the Congress of the old Confederation. It extended from Pennsylvania to the Mississippi, and from the Ohio to the Great Lakes. It continued thirteen years. Marietta (O.) was the capital, and General Arthur St. Clair was the only governor. Its history records a succession of Indian wars. In 1794, General Anthony Wayne erected a fort (named by his soldiers in his honor) at Kekionga, and concluded a famous treaty with the Indians.

19. *Indiana Territory* was organized in 1800, and included all the old North-west Territory, except Ohio. Its white population was 4,875. Vincennes was made the capital, and William Henry Harrison, of Virginia, son of Benjamin Harrison of Revolutionary history, was appointed governor. Michigan Territory was cut off in 1805, and Illinois Territory in 1809, leaving Indiana with her present boundaries, to which was nominally attached a portion of the north peninsula of Michigan.

20. *The second war with Great Britain* began in 1811, with the Battle of Tippecanoe. This was fought by the savage allies of the British against the Americans, seven miles north of the site of La Fayette. In this battle, Governor Harrison, with about 1,000 men, though surprised at night, routed Lalewasika, the Prophet, who led the Shawnees and members of various other tribes.

21. *Ft. Harrison* (near the site of Terre Haute), under Captain Zachary Taylor, maintained a heroic defense against the Indians in the following year. Ft. Wayne was besieged by the savages, but was relieved by Harrison (at that time a general).

There was a terrible massacre at the Pigeon Roost settlement, in Scott County. General John Tipton won a famous skirmish at Tipton's Island (Jackson County). The people were in a state of alarm for three years, murders being committed in all parts of the territory. Harrison and Taylor, heroes of this war in Indiana, were both subsequently elected to the Presidency, and both died in office.

22. *Corydon* was made the temporary capital in 1813, the county court house serving for a state house. Though but thirteen miles from the Ohio, the town was near the center of population, for the river was the sole highway of immigration, and there was only a narrow, winding strip of inhabited land, following its course.

23. In 1816, *Indiana* was admitted as a state, with a population of 63,897. During the second term of Governor Jennings (1819-22), a capital site was selected and surveyed, and named Indianapolis.

24. *The early commerce of Indiana* was conducted along the Ohio and Mississippi rivers, New Orleans being the greatest market for the products of the state. The Great Lakes were useless for commerce, for they led only to the wilds of western New York. All this was changed by the completion of the Erie Canal from Lake Erie to the Hudson River, in 1825.

25. In 1832, *Indiana* undertook a magnificent scheme of public works. A canal to connect the lower Wabash River with Lake Erie, was commenced. Five railroads were chartered in one day. These and other schemes finally brought the state to the verge of financial ruin. In 1841, the state debt, including all its liabilities, amounted to \$15,088,146.

26. In 1834, *the Indiana State Bank* was chartered. Its career for a quarter of a century was wonderfully successful. Its notes passed current in New York and New Orleans. The state's profits, amounting to nearly five million dollars, and also a bank tax on stockholders' shares, amounting to eighty thousand dollars, were added to the State Common School Fund.

27. *The present State Constitution* was framed by a Constitutional Convention which met in Indianapolis in 1850-1, in the work of which Thomas A. Hendricks, Schuyler Colfax, William Steele Holman, William H. English, Robert Dale Owen, and many other noted men participated.

28. *In the Mexican War*, five regiments from Indiana participated.

29. *In the War of Secession*, Indiana contributed to the Federal forces about two hundred thousand men. In this war, the Confederate General John H. Morgan passed through six of the southern counties in his raid of July, 1863.

30. *Besides the two Whig Presidents* who won their early fame in Indiana, and who have been mentioned above, several citizens of the state have received signal honors in the service of the nation at large. Schuyler Colfax (Republican, 1868) and Thomas A. Hendricks (Democrat, 1884) were elected to the Vice-Presidency. George W. Julian (Free-soiler, 1852), Thomas A. Hendricks (Democrat, 1876), and William H. English (Democrat, 1880) were candidates for the same high office. Jesse D. Bright (Democrat) was President of the Senate during the term of President Pierce. Schuyler Colfax and Michael C. Kerr served as Speakers of the House; and Caleb B. Smith, Hugh McCullough, J. W. Tyner, R. W. Thompson, and Walter Q. Gresham, as members of Cabinets.

31. **Governors of Indiana.**—*Territorial.*—William Henry Harrison, John Gibson (acting), and Thomas Posey. *State.*—*Under the first Constitution*, each term consisted of three years:—Jonathan Jennings, Ratliff Boone (acting), two terms; William Hendricks, James B. Ray (acting), one term; James B. Ray, two terms; Noah Noble, two terms; David Wallace, one term; Samuel Bigger, one term; James Whitcomb, Paris C. Dunning (acting), two terms; Joseph A. Wright, one term. *Under the present Constitution*, each term consisting of four years*:—Joseph A. Wright, Ashbel P. Willard, Abram A. Hammond (acting), Henry S. Lane,† Oliver P. Morton (acting), Oliver P. Morton, Conrad Baker (acting), Conrad Baker, Thomas A. Hendricks, James D. Williams, Isaac P. Gray (acting), Albert G. Porter, Isaac P. Gray.

* Under the present Constitution, the Governor is not eligible to a consecutive re-election.

† Col. Lane was Governor but two days. Lieut.-Gov. Morton, therefore, served through the term as Acting Governor.

32. *Chicago* is the metropolis of the North-west. It is the center of more than 10,000 miles of railway,² and is one of the largest grain,³ lumber, and live-stock markets in the world. Its pork-packing establishments are very extensive.

33. *Indiana* is the smallest of the North Central States, having less than half the area of Kansas.

34. *The northern part of the state* consists of prairie land; the south-western part is undulating and hilly.

35. *Grain-farming* and *stock-raising* are the chief industries. Coal and iron are abundant. Large quarries of limestone and sandstone furnish an abundance of building material.

36. *Indianapolis* is the capital and metropolis. It is the largest city in the United States, not on navigable water.

37. *Evansville* is the center of a rich coal and iron district, and has an extensive river commerce.

38. *Ohio*, the most eastern of the North Central States, is one half the size of Kansas. Its surface is hilly in the

south,⁴ but becomes gradually level toward the north and west. It is a leading state in agriculture and dairying.

39. *In commerce*, manufacturing, and the mining of coal and iron, Ohio ranks high among the states of the Union.⁵

40. *Columbus*, the capital, is a railway center. It contains large manufacturing establishments.

41. *Cincinnati* is the metropolis. It is noted for its river commerce, pork-packing, and the manufacture of clothing and furniture.

42. *Kentucky* is about one half the size of Kansas. Its surface is mostly hilly, and slopes toward the north-west. The south-eastern part is mountainous.

43. *In the production* of tobacco, hemp, and flax, Kentucky surpasses every other state

in the Union. The "blue-grass" region, in the basins of the Licking and Kentucky rivers, is celebrated for fine horses.

44. *Frankfort*, on the Kentucky River, is the capital.

45. *Louisville*, at the Falls of the Ohio River,⁶ is the most important tobacco market in the country.



A "BLUE-GRASS" SHEEP PASTURE.

2. More than 350 trains leave and enter Chicago, every day. During the shipping season, a daily average of sixty vessels clear for the various ports with which the city is commercially connected. The enormous amount of products taxes the carrying capacity of the railways to their utmost extent. The Chicago, Burlington, and Quincy Railway Company, alone, owns 600 locomotives and 25,000 cars; and yet, at times, it is compelled to hire additional cars.

3. The grain product of the Mississippi Valley is handled, in bulk, by means of elevators, the essential machinery of which is a belt, to which are fastened buckets, or scoops, each holding a bushel or more. The belt and spout are lowered into the hold of the vessel which is to be unloaded; and, in a very short time, the grain is transferred to the capacious bins of the warehouses.

4. Much of the southern part of Ohio was formerly covered with forest trees and thick undergrowths, which, upon the advance of civilization, were cut down. As a result of this improvidence, during the season of heavy rains and melting snow, the water, no longer held by growing vegetation, quickly runs to the rivers, and disastrous floods follow. The water of the Ohio River, at Cincinnati, has been known to rise more than seventy feet above low water mark.

5. By means of the canal systems of Ohio, barges and canal-boats, loaded with produce, may be towed to the Atlantic, to the Great Lakes, or to the Mississippi River.

6. The Falls are the only obstruction to the navigation of the Ohio River. At seasons of high water, steamers may pass over them; but during low water, it is necessary to go through the canal which has been built around the falls.

7. Other important Cities.—In Wisconsin,—*Racine* (ra sēn') is a lake-port and manufacturing center. *Osh'kosh* is noted for its lumber trade and manufactories. *La Crosse* (la krōs') is the metropolis of the western part.

8. In Michigan,—*Grand Rapids* is a railway and manufacturing center. *Bay City* and *East Sag'inaw* are salt and lumber markets. *Jackson* is a railway center.

9. In Illinois,—*Pe'oria* is the center of a large corn trade. *Quincy* is a manufacturing center, and the metropolis of the western part of the state. *Bloomington* is a produce market. *Aurora* and *Rockford* contain large manufacturing establishments.

10. In Indiana,—*Fort Wayne* has extensive manufactories of farming implements and carriage wheels. *Terre Haute* (ter'ē hōt) is a manufacturing and railway center. *New Albany* contains the largest plate-glass works in the United States.

11. In Ohio,—*Cleveland* is the center of an extensive commerce with Canadian ports. It is noted for its manufactories and petroleum refineries. *To'l'do* is a grain and lumber market. *Dayton*, the metropolis of the Miami (mī ān'e) Valley, contains extensive car factories.

12. In Kentucky,—*Covington* and *Newport*, opposite Cincinnati, are important river-ports. They also contain extensive manufactories.

13. Natural Scenery.—*Devil's Lake* and the *Dalles* * of the Wisconsin and St. Croix rivers are favorite summer resorts of Wisconsin. The northern shores of Michigan

and the islands near Mackinac (mak'in aw) Strait are famed for their beautiful scenery. Starved Rock and Buffalo Rock, near Ottawa, Illinois, are connected with Indian tradition. Wyandotte (wī an dōt') Cave, Crawford County, Indiana, is one of the largest caves in the world. One of its chambers is 250 feet in height. Mammoth Cave, Edmondson County, Kentucky, is asserted to be the largest cave in the world; its galleries aggregate over 200 miles in length.

14. Distinguished Men.—Born in Ohio, Ulysses S. Grant, Rutherford B. Hayes, and James A. Garfield, presidents; in Kentucky, Abraham Lincoln, president; and Jefferson Davis, statesman.

15. Historical Notes.—In various parts of the Mississippi Valley, especially in Ohio, there are relics of a people usually known as the Mound Builders, who preceded the Indians. Some of these remains, which have the character of defensive works, are variously shaped; and, in nearly every case, they consist of an embankment surrounded by a ditch, or moat. Usually, they are regular and geometrical in shape. Many of them were manifestly connected with religious rites and ceremonies. The elaborate stone carvings, decorated pottery, and ornamental articles beautifully wrought in silver and copper, imply that these people had reached a high degree of civilization. Who they were, whence they came, and whither they went, are questions, to which, thus far, human investigation has failed to furnish a reply.

16. Father Marquette established the first settlement at Sault Sainte Marie (soo sēnt mā' rī), in 1668. Detroit was the first permanent settlement. The settlers were greatly harassed by Indians, and many massacres took place. Michigan became a state in 1837. Wisconsin was admitted as a state in 1848.

17. A French mission was established at Kaskaskia as early as 1682. As a part of the Louisiana purchase, it passed into the possession of the United States, in 1803. Illinois was admitted as a state in 1818. A destructive fire burned the entire business portion of Chicago in 1871. The rebuilding began almost before the embers had cooled.

18. Indiana Territory was formed from North-west Territory in 1800, and included nearly all the land between Pennsylvania and the Mississippi River, except Ohio.

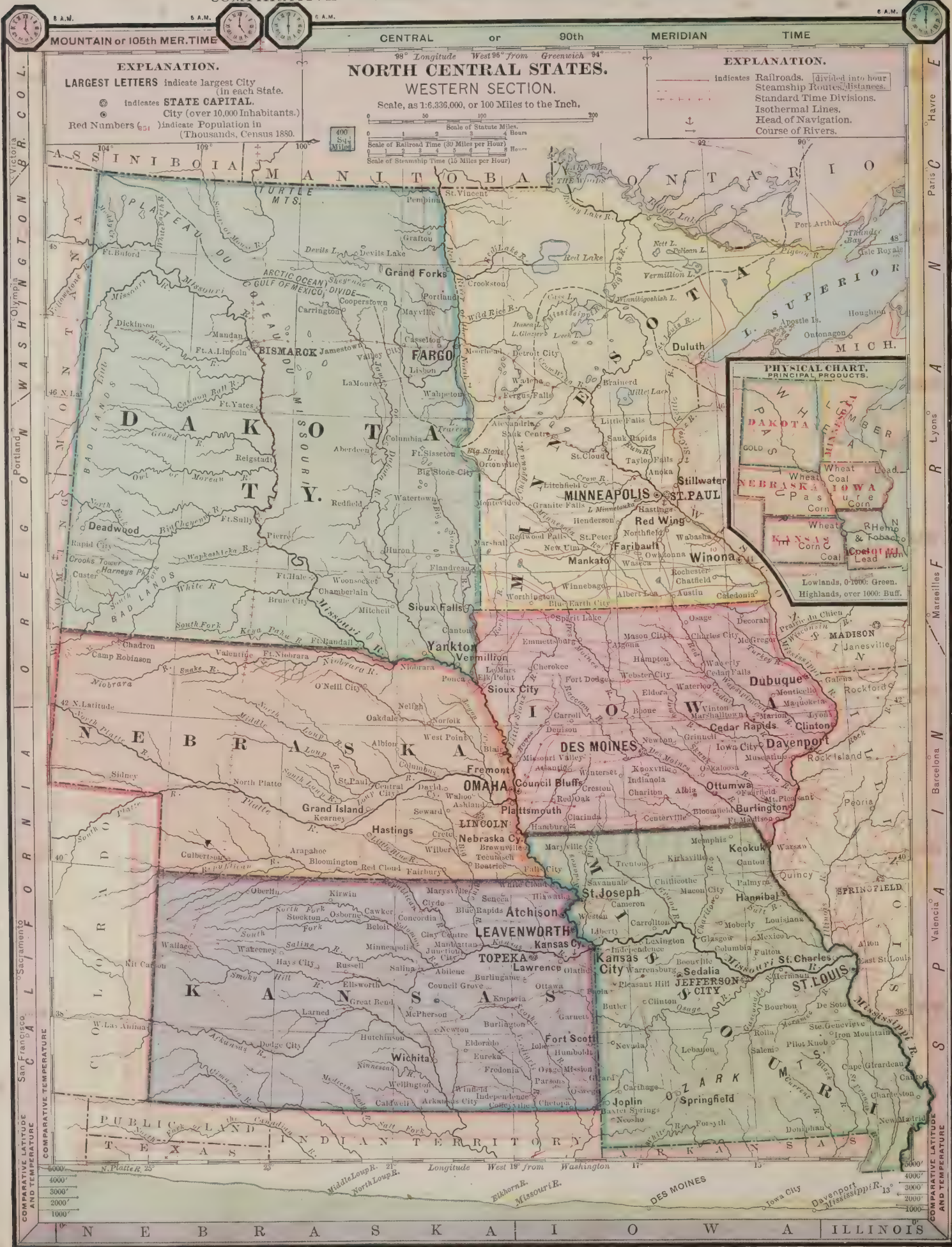
19. Michigan Territory was set off in 1805, and Illinois Territory, in 1809.

20. Indiana was admitted to the Union as a state, in 1816. Tippecanoe was a battle-field of the War of 1812.

21. The public land north of the Ohio was organized as the North-west Territory, in 1787. It comprised what is now the States of Michigan, Ohio, Indiana, Illinois, Wisconsin, and a part of Minnesota. In the following year, a settlement was formed at Marietta. Shortly afterward, a settlement was established on the present site of Cincinnati. In 1802, the North-west Territory was divided, and the State of Ohio was formed from the eastern part.

22. Kentucky was settled by emigrants from North Carolina and Virginia. Settlements were made by Daniel Boone. It was admitted into the Union, as a state, in 1792.

* *dalles* (dalz), a succession of cascades. *e tō'o rate*, produced with labor.



GENERAL QUESTIONS.

MISSOURI.

KANSAS.

NEBRASKA.

1. *North Platte R.*,—2. *Loup R.*,—3. *Missouri R.*

IOWA.

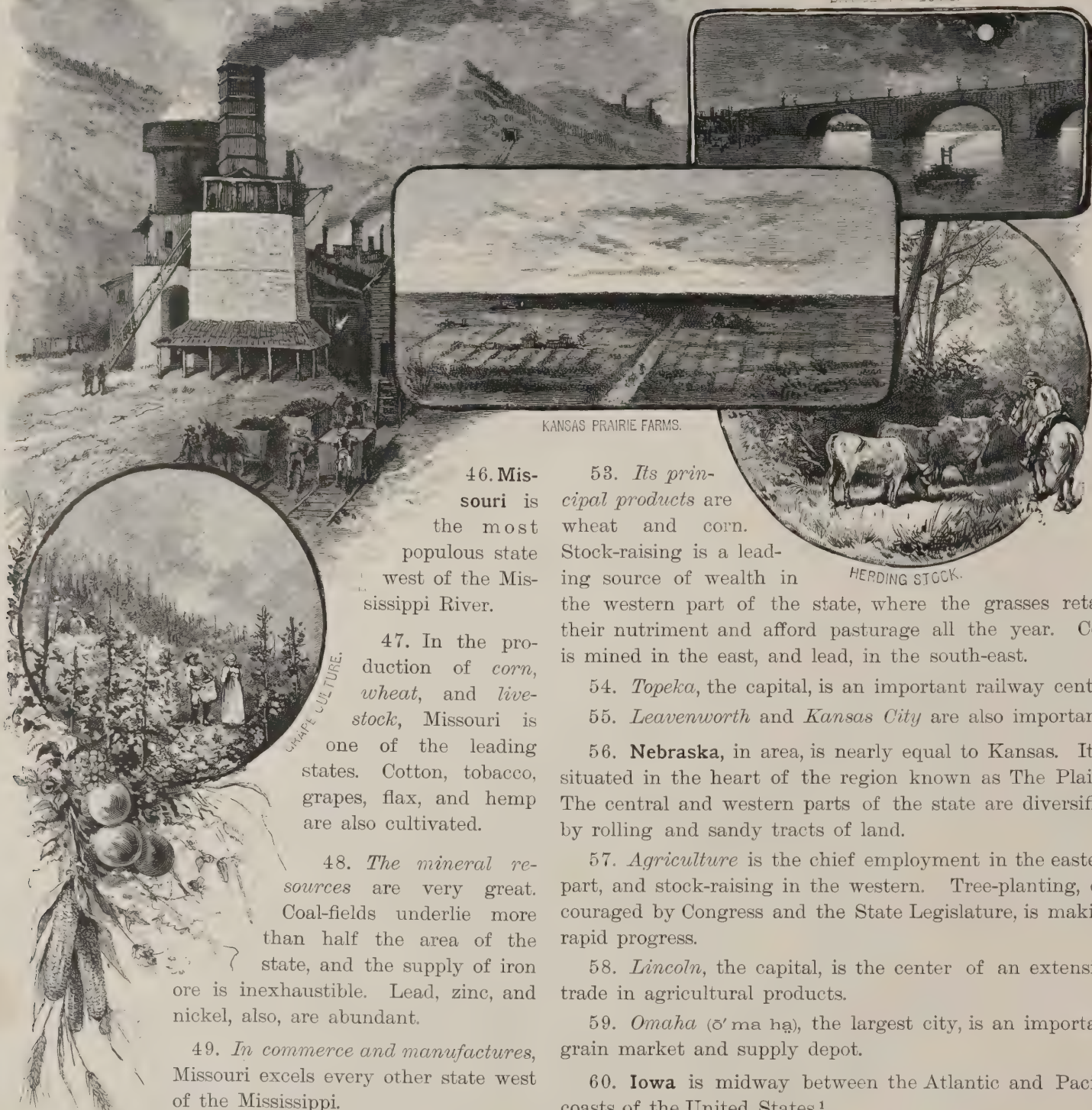
MINNESOTA.

DAKOTA TERRITORY.

1. *Lit. Missouri R.*,—2. *Missouri R.*,—3. *Lake Traverse.*

IRON MOUNTAIN

BRIDGE AT ST. LOUIS.



46. Missouri is the most populous state west of the Mississippi River.

47. In the production of corn, wheat, and live-stock, Missouri is one of the leading states. Cotton, tobacco, grapes, flax, and hemp are also cultivated.

48. The mineral resources are very great. Coal-fields underlie more than half the area of the state, and the supply of iron ore is inexhaustible. Lead, zinc, and nickel, also, are abundant.

49. In commerce and manufactures, Missouri excels every other state west of the Mississippi.

50. Jefferson City, on the Missouri, is the capital.

51. St. Louis is the largest city, and the chief distributing point for the products of the Mississippi Valley. This city contains extensive flour-mills, meat-packing and manufacturing establishments.

52. Kansas occupies the geographical center of the United States. Its surface is a rolling prairie.

53. Its principal products are wheat and corn.

Stock-raising is a leading source of wealth in the western part of the state, where the grasses retain their nutriment and afford pasturage all the year. Coal is mined in the east, and lead, in the south-east.

54. Topeka, the capital, is an important railway center.

55. Leavenworth and Kansas City are also important.

56. Nebraska, in area, is nearly equal to Kansas. It is situated in the heart of the region known as The Plains. The central and western parts of the state are diversified by rolling and sandy tracts of land.

57. Agriculture is the chief employment in the eastern part, and stock-raising in the western. Tree-planting, encouraged by Congress and the State Legislature, is making rapid progress.

58. Lincoln, the capital, is the center of an extensive trade in agricultural products.

59. Omaha (o' ma ha), the largest city, is an important grain market and supply depot.

60. Iowa is midway between the Atlantic and Pacific coasts of the United States.¹

61. It is a leading state in the production of grain, live-stock, butter, and flax. Bituminous coal is abundant.

62. Des Moines (da moin) is the capital and metropolis.

63. Dubuque (doo buk'), in the heart of the lead region, is a manufacturing and railway center.²

64. Minnesota is a little larger than Kansas. It is celebrated for its picturesque lakes, cascades, dalles, and forests.³

1. The lake region, in the north-western part of Iowa, is the highest part of the state, and the summit, or divide, from which nearly all its rivers flow.

2. Iowa is crossed by several lines of railway which connect the two sides of

the continent. Nearly every western trunk-line of railway terminating at Chicago has branch roads extending to St. Paul, Council Bluffs, and Kansas City.

3. It is estimated that there are nearly 10,000 lakes within the boundaries of



65. Grain-farming is the principal industry. Lumbering is extensively carried on along the river courses. The abundance of water-power has induced the establishment of manufacturing factories in all parts of the state.

66. St. Paul, the capital, is the oldest city in the state. It is the most important railway center north-west of Chicago, and is also the center of an immense river commerce.

67. Minneapolis, the largest city, is situated near the Falls of St. Anthony. It is a leading grain market, and contains the largest flour-mills in the United States.

68. Dakota is the largest territory, except Alaska. It is nearly twice the size of Kansas.

69. Wheat is the staple production. Stock-raising is an important industry. In the region of the Black Hills, gold-mining is the chief employment.

70. Bismarck, on the Missouri River, is the capital.

71. Fargo, a railway center, is on the Red River of the North, near the head of navigation.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about the North Central States, as described on page 43.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on the North Central States, as shown on page 43.

Minnesota. Recent surveys have shown that Lake Glazier is about six feet higher than Lake Itasca, into which the former discharges its water; and it is now officially recognized as the source of the Mississippi River.

4. Other important Cities.—In Missouri,—Kansas City is a railway center connecting transcontinental lines, and also the depot of an extensive river commerce. St. Joseph is one of the largest manufacturing centers west of the Mississippi River.

5. In KANSAS,—Atchison and Lawrence are important commercial centers.

6. In NEBRASKA,—Nebraska City is an important river-port. Fremont, Hastings, and Plattsmouth are rapidly growing towns.

7. In IOWA,—Council Bluffs, the eastern terminus of the Union Pacific Railway, is connected with Omaha by an iron railway bridge across the Missouri River. Ke'o kuk, Davenport, and Burlington are important river-ports and commercial depots.

8. In MINNESOTA,—Winona (wī nō'nā) is a grain market and manufacturing city. Stillwater is a lumber market. Duluth (du looth'), the chief lake-port, is the terminus of the Northern Pacific Railway.

9. In DAKOTA,—Yankton is the metropolis of the southern part of the territory. Deadwood is situated in the Black Hills mining region.

10. Natural Scenery.—The Falls of St. Anthony (sānt ān'tō nō), and the Falls of Min ne hā' hā and Lake Pe' pīn, Minnesota, are celebrated for their beautiful scenery. The vicinity of Dubuque, in Iowa, is remarkable for fine scenery. Caves are numerous in the limestone region. Iron Mountain and Pilot Knob, Missouri, are masses of iron ore, two hundred feet in height, covering many acres in extent.

11. Historical Notes.—Minnesota was explored in 1680, by French fur traders; but no settlements were made for nearly one hundred years thereafter. Fort Snelling was established in 1819. The early settlers suffered greatly from Indian depredations. Since 1864, the growth has been wonderful. Minnesota was admitted as a state in 1858.

12. Nebraska was admitted into the Union in 1867.

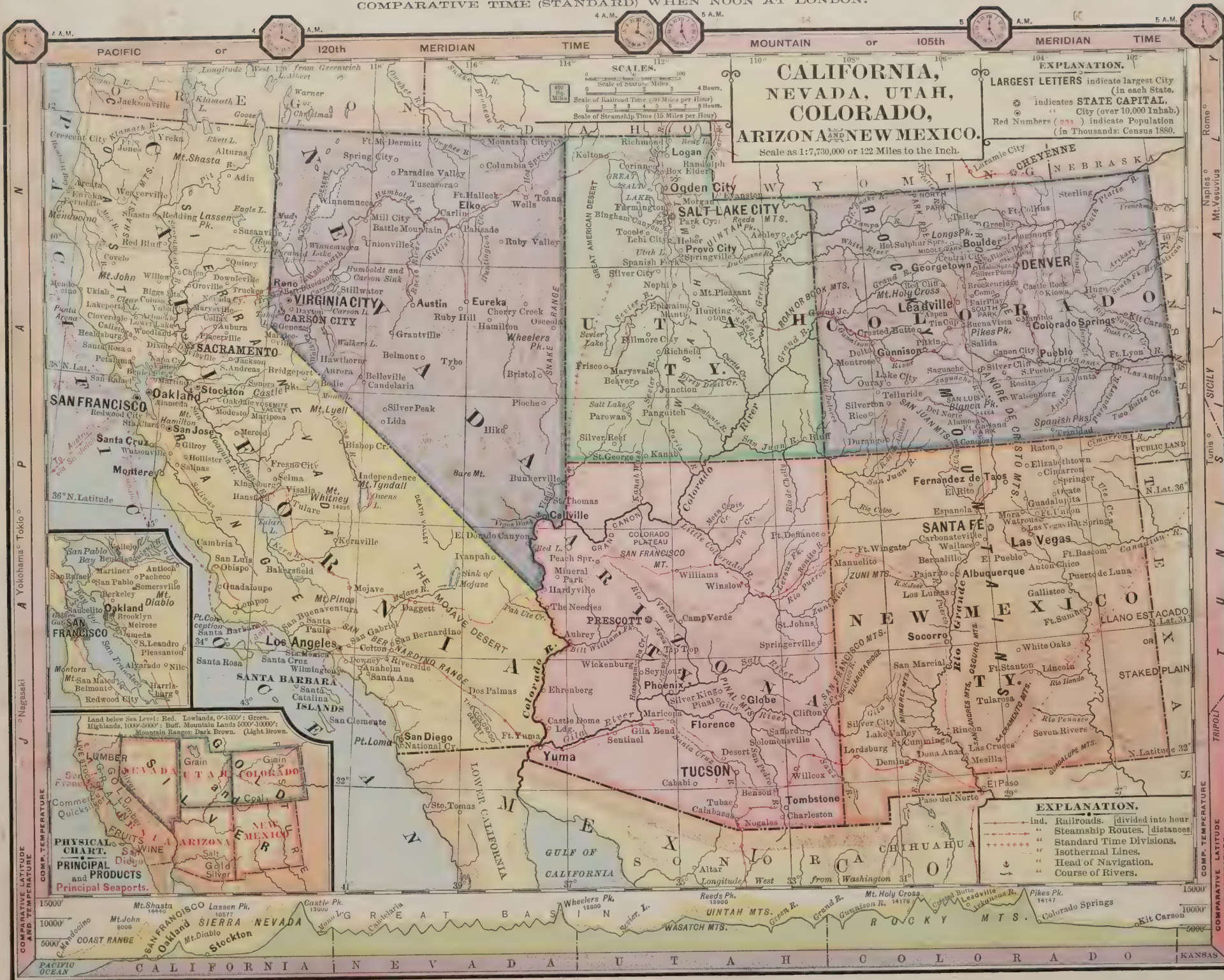
13. Iowa was a part of the Louisiana purchase. The first settlement was made by Julien Dubuque, a Canadian. Settlements were made at Burlington and other points along the Mississippi. Iowa was admitted in 1846.

14. The south-western part of Kansas was acquired from Mexico; the remainder formed a part of the Louisiana purchase. Prior to 1854, the region now forming the State of Kansas was inhabited, mainly, by Indians. When Kansas was organized as a territory, Congress gave its citizens the right to choose whether it should become a free, or a slave, state. This decision was followed by six years of violence and bloodshed. The free-soil party finally triumphed, and a constitution prohibiting slavery was adopted.

15. Missouri was set off from the Louisiana Territory, under the name of the District of Louisiana, in 1803. Shortly afterward, the name was changed to Missouri. It became a state, after a long and bitter political struggle, in 1821.

16. Dakota was formerly a part of Missouri Territory. The first extensive explorations were made by Lewis and Clarke, and the first settlement was formed at Pembina (pēm' bē ng). It was organized as a territory in 1861.

COMPARATIVE TIME (STANDARD) WHEN NOON AT LONDON.



CALIFORNIA, NEVADA, UTAH, COLORADO, ARIZONA, AND NEW MEXICO.

GENERAL QUESTIONS.

Location.—In what part of the United States are these states and territories situated? Which borders on the Pacific Ocean? What country south? What state partly in the Mississippi Basin?—in the Great Basin?

Latitude and Longitude.—What parallel on the northern boundary?—near the southern part? What meridian on the eastern boundary of Colorado?

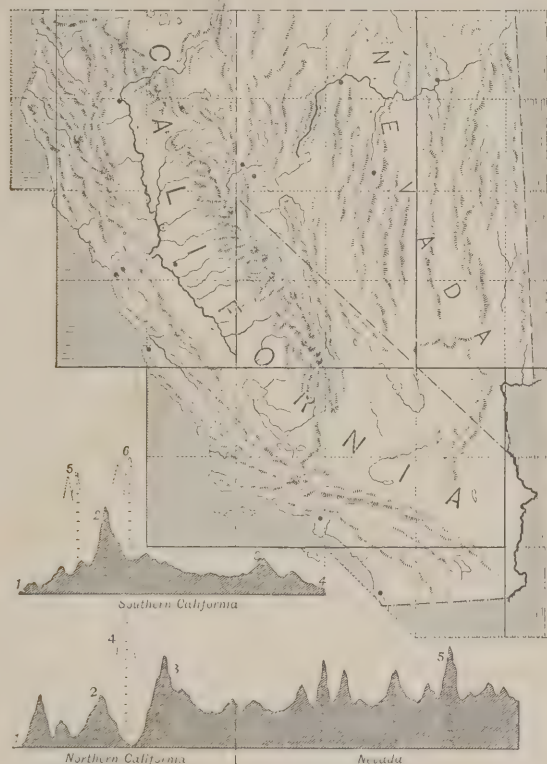
Surface.—What great mountain system crosses the eastern part? What ranges near the western part? Through what state and territory does the Great Divide extend?

What large rivers and their tributaries drain the Western Slope? What river and its tributaries drain parts of the Great Basin? Mention the rivers of this section whose waters finally reach the Gulf of Mexico? In what part are most of the lakes?

Climate and Products.—How does the mean temperature of the eastern part compare with that of the western part? Where is the warmest mean temperature?—the lowest, or coldest?

Where is the chief grain region of this section?—the lumber region?—the pasture region?—the fruit and wine region? What minerals are found in this section?

Cities and Commercial Features.—What important sea-port and railway center on the Pacific Coast? What railway center and metropolis near the Rocky Mountains?



NORTHERN CALIFORNIA AND NEVADA.—1. C. Mendocino.—2. Coast Range.—3. Lassen Pk.—4. Mt. Shasta.—5. East Humboldt Mts. SOUTHERN CALIFORNIA.—1. Point Conception.—2. Mt. Pinos.—3. Providence Mts.—4. Colorado River.—5. Castle Rock and Mt. Lyell, 6. Mt. Whitney, Mt. Tyndall, and Mt. Keweenaw (Sierra Nevada Mountains).

CALIFORNIA.

What natural boundaries has California? What state north? What state and territory east? What peninsula south? Where is the chief agricultural region?—the mineral region? Where is Mt. Whitney?—Mt. Shasta? Mention three capes on the coast,—three bays (*See small map*),—the largest lakes. What islands south-west? What rivers drain the northern part?—the southern? For what products is Southern California celebrated? What is the capital of California?—the largest city? Mention the other important cities in California. Which are in the southern part? What deserts in the southern part? What is the altitude, or elevation, of Mt. Whitney?

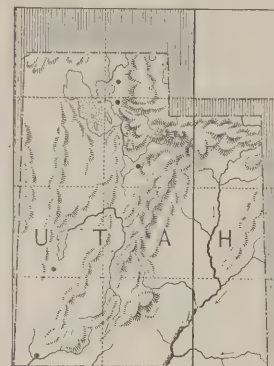
Map Drawing.—Draw a map of California, as directed on page 37.

NEVADA.

What state and territory north? What state west?—territory east?—south-east? What river forms the south-eastern boundary? What trading post at the head of navigation on the Colorado River? Mention three lakes having no outlet. In what part of the state are they? What rivers flow into Humboldt and Carson Sink?

What is the capital of Nevada?—the principal city? What famous mines near this city? (*See page 79, paragraph 31.*) What railway crosses Nevada? *Ans. The Central Pacific Railway.* Where is Reno?—Mt. Davidson?—Lake Tabor?—Austin?—Eureka?—Wheeler's Peak?

Map Drawing.—Draw a map of Nevada, as directed on page 37.



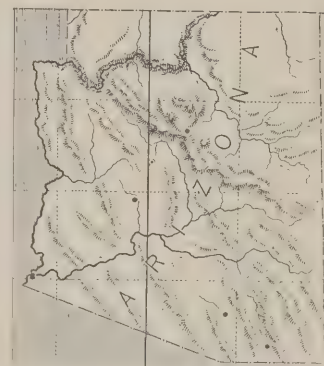
1. House Range.—2. Great Salt Lake.—3. Wasatch Mts.—4. Green River.—5. Roan Mts.—6. Uintah Mts.

UTAH TERRITORY.

What parallel on the northern boundary of Utah?—on the southern? Between what meridians is Utah situated? What states and territories bound it? What mountains in Utah? What large lake in the northern part?

Mention three other lakes. What river and tributaries drain the eastern part? What rivers unite and form the Colorado? What desert in the north-western part?

What is the capital and metropolis of Utah? Mention the other important cities? What are the principal products of Utah?



1. Colorado R.—2. Black Mts.—3. Music Mts.—4. San Francisco Mts.—5. White Mesa.

Map Drawing.—Draw a map of Utah, as directed on page 37.

ARIZONA TERRITORY.

What country south of Arizona? What river forms most of its western boundary? What tributary has the Colorado River in the northern part?—in the southern part? In what part is the Grand Cañon of the Colorado? Mention the capital of Arizona,—the metropolis,—the chief mineral products.

Map Drawing.—Draw a map of Arizona, as directed on page 37.

COLORADO.

What are the boundaries of Colorado? What is the average height of the western part of this state?—of the eastern part? How does the altitude of Colorado compare with that of Texas?—Mississippi? (*See profile map of U. S.*) Mention the mountain peaks which are more than 14,000 feet above the level of the sea. What tributary of the Colorado River in this state?—of the Missouri?—of the Mississippi? What sea-coast is nearest Colorado? What is the capital and chief railway center? Mention the other principal cities.



1. Uncompaghere Plateau.—2. Uncompaghere Valley.—3. Grand Canon.—4. Grand Mesa.—5. Gunnison Peak.—6. Ruby Peak.—7. Crested Butte.—8. Mts. Yale and Harvard.—9. Divide.—10. Pike's Peak.—11. Colorado Springs.—12. Long's Peak.—13. Gray's Peak.

Map Drawing.—Draw a map of Colorado, as directed on page 37.

NEW MEXICO TERRITORY.

What country south of New Mexico? What two rivers and their tributaries drain most of this territory? Into what do they flow? In what direction do the mountain ranges extend? In what direction do its principal rivers flow? What is the capital and largest city? Mention the other principal cities. About how far is Santa Fe above the level of the sea? Mention the principal products.



1. Sierra Madre.—2. Albuquerque.—3. Santa Fe.—4. Staked Plains.—5. Mora Peaks.—6. Mt. Taylor.

Map Drawing.—Draw a map of New Mexico, as directed on page 37.

THE PACIFIC COAST AND ROCKY MOUNTAIN DIVISION.

1. **Position.**—This section is commonly called the Pacific Highlands. It extends from the eastern boundary of Colorado to the Pacific Ocean, and occupies portions of three physical regions: the Mississippi Valley, the Great Basin, and the Pacific Slope.

2. **Surface.**—This region is traversed from north to south by the ranges of the Rocky Mountain System, whose culminating ridges are the Cascade and Sierra Nevada Mountains in the west, and the Rocky Mountains, proper, in the east.

3. *In these highlands*, there are more than forty peaks, each of which is more than 10,000 feet above the level of the sea. Mt. Whitney, Mt. Shas'ta, and Mt. Tyndall, in California; and Pike's Peak, in Colorado, have each an altitude of more than 14,000 feet.¹

4. West of the *Cascade and Sierra Nevada Mountains*, is the Coast Range, a low range of mountains which shapes the western coast of the United States.²

5. *These mountains inclose* a number of large valleys, famous for their fertility. The Willamette (wīl ā'met), Sacramento (sā krā mēn'tō), and San Joaquin (sān ho ā keen') are the most important.

6. *The Great Basin* is a plateau inclosed between the two great chains of the Rocky Mountain System. It is crossed by a number of parallel mountain ranges, of which the Wasatch (wā'satch) is the highest. Its elevation above the sea-level is from 4,000 to 6,000 feet.

7. **Lakes.**—Lakes are numerous in the Great Basin. Many of them are salt, or alkaline.

8. **Rivers.**—Many of the river basins, instead of being wide and fertile valleys, are deep, narrow canons whose sides are nearly vertical. The Grand Cañon of the Colorado, in some localities, exceeds 5,000 feet, in depth. The canons of the Colorado, and the Dalles of the Columbia River, are noted for grandeur and beauty.

9. *The Columbia, Colorado, and Klamath* (klā'mat) *rivers* flow through passes to the ocean. Portions of the Great Basin are treeless, and their rivers have no outlet to the ocean.

10. **Soil.**—There is every variety of soil, from the most fertile to the most barren.

11. **Climate.**—The climate of that portion of this section lying east of the Rocky Mountains, is celebrated for its

dryness and healthfulness.³ Owing to the lack of rain, crops require irrigation.*

12. *In the northern part of the Great Basin* are many fertile valleys; but the southern part is hot, dry, and barren.⁴

13. *The climate of the Pacific Slope* is unlike that of any other part of the United States. Owing to the warm winds from the Pacific Ocean, ice and snow are almost unknown, except at high altitudes. There are but two seasons,—the rainy, or winter, and the dry, or summer, seasons. The rain-fall varies, being slight in the south, and excessive* in the north.

14. **Vegetation.**—The highlands of this section are covered mostly with vast forests of fir, pine, cedar, and redwood. In the southern part, cactus, mesquite (mēs kē'tā), yucca (yūk'kā), and various species of agave, or century plant, abound. Sage-brush, a low shrub, is a characteristic of the Great Basin; yellow pine and mountain mahogany, of the mountain slopes; and cotton-wood, of the river-bottoms. Wild grasses are every-where abundant.

15. **Animals.**—The grizzly, brown, and black bears are common in the mountains. Deer and antelopes are found on the foot-hills. The coyote* (koy ō'te) is every-where common: panthers, cougars (koo'gars), and Rocky Mountain sheep are occasionally found. Beavers and other fur-bearing animals are abundant in the north. Prairie-dogs, animals resembling squirrels, live in holes which they burrow in the dry plains. Salmon are extremely abundant in the rivers of the Pacific Coast.⁵ Whales, seals, and walruses are numerous in the neighborhood of Alaska.

16. **Minerals.**—Gold, silver, copper, quicksilver, lead, iron, nickel, coal, salt, and sulphur are found in this region, which has for many years been the chief source of supply of the precious metals in the United States.

17. **Industries.**—The mines, farms, forests, and stock-ranches* furnish the chief employments.

18. *The Pacific Slope* is famous for large crops of wheat.

19. *The manufactures* comprise farming and mining implements, and the products of smelting furnaces, lumber-mills, woolen-mills, fruit and salmon-canning establishments.

20. *The foreign commerce* comprises the exportation of grain and lumber to Europe, and the importation of sugar, tea, and rice.

1. Many of these peaks, especially those of the Cascade and Sierra Nevada Chain, are extinct volcanoes having well-defined craters.

2. The Coast Range is connected with the Cascade and Sierra Nevada Chain by numerous cross-spurs of mountains.

3. During the dry season, the atmosphere of the high region is remarkable for its purity. Fresh meat left in exposed places does not putrefy, but dries, or cures. Grass cures in the same manner, and, although parched and brown, retains its nutriment until the spring. Cattle graze on the plains all the year.

4. The southern part of the Great Basin contains two remarkable depressions, the *sinks* of the Amar'gosa and Felipe (fē'pā) rivers, which are nearly 400 feet below the sea-level. The former is usually known by the name of Death Valley. During the early history of California, a party of emigrants attempted to pass through this valley. Their supply of water was soon exhausted, and none could be

found in the valley. Owing to the intense heat, they perished one by one, until, of the 152 persons entering the valley, only four or five lived to complete the journey.

5. Salmon spend most of their lives in salt water; but, at a certain period in the spring, they leave the ocean, and make their way up the rivers and creeks for the purpose of depositing their eggs. At this season, the smaller streams are often completely filled, and the channels blocked, by the enormous masses of fish. In the autumn, the survivors return again to the ocean.

* *ir rī gā'tion*, conducting water from streams by means of ditches, or canals; and, when necessary, allowing it to cover the ground. *ex gēs'ive*, beyond the ordinary amount. *coyote*, a fleet animal resembling a dog. Its height is from twenty to twenty-four inches, and its color is a dull yellowish-gray. It is known, also, as the prairie-wolf. *stock-ranches*, farms for raising cattle, sheep, etc.



1. The water of Mono Lake contains so much of alkaline salts, that nothing, but the larvæ of a species of fly, can live in it. There are borax and soda lakes in several parts of the state.

2. Some of the Sequoias, or "big trees," are 350 feet in height, and 30 feet in diameter.

3. The south-western part of California contains extensive vineyards and orange groves.

21. The domestic commerce consists, chiefly, in the exchange of mining products, live-stock, wool, wine, fruits, raisins, and canned goods, for manufactured articles.

22. People.—The settlement of the greater part of this section resulted from the discovery of gold and silver.

23. Nearly all the Indians of the United States are in the Pacific States and the territories. In the South, are many Spanish Americans.

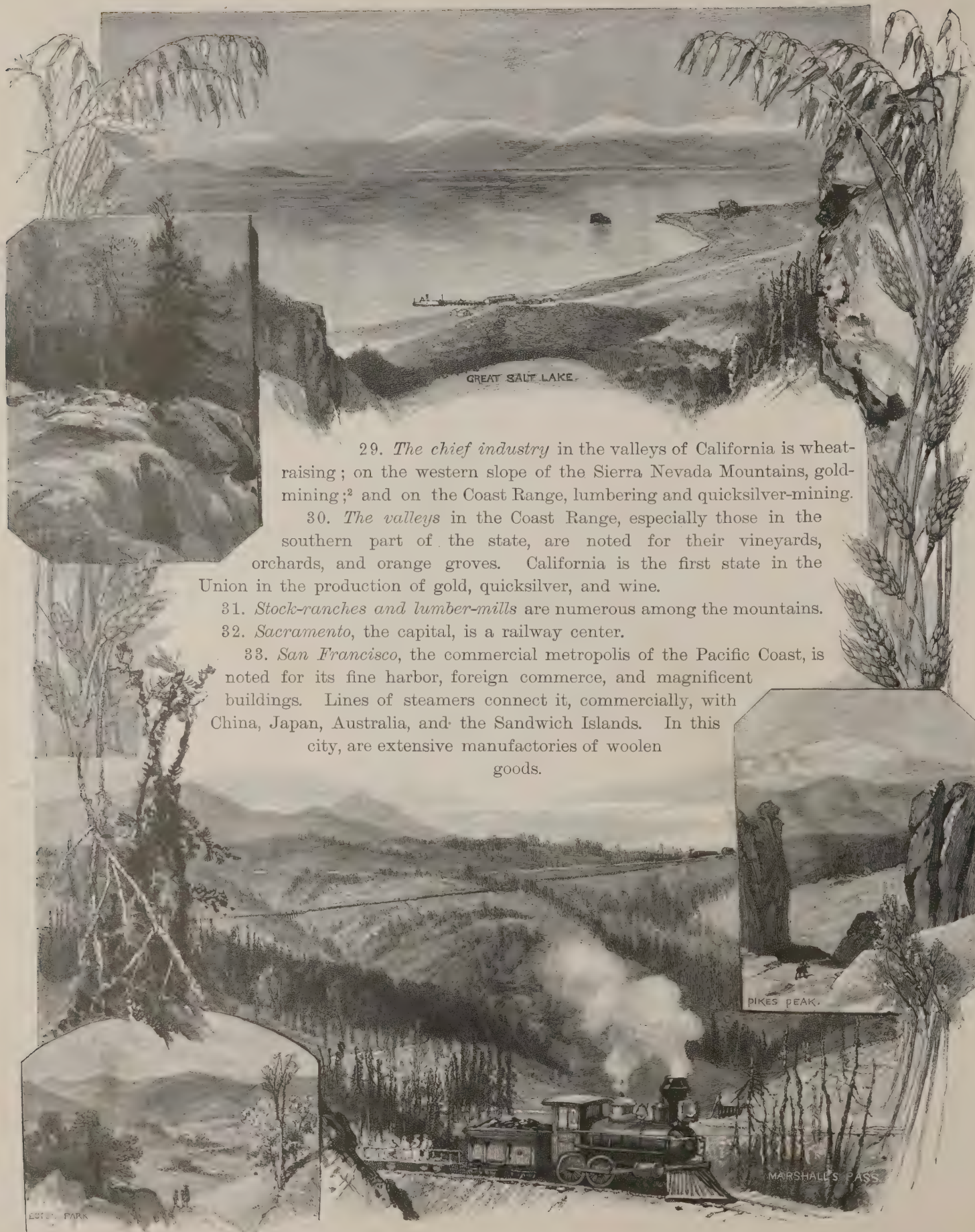
24. California, the second state, in size, in the United States, is more than twice as large as Kansas.

25. The Sierra Nevada Mountains and the Coast Range inclose the Sacramento and San Joaquin valleys, the richest agricultural region of the state.

26. There are many lakes in this state, the largest of which is Tulare (tō lā'rē) Lake. Some of them contain mineral salts.¹

27. The Yosemite (yō sēm'y tē) Valley is noted for the grandeur of its scenery; and some of the trees of California are the largest in the world.²

28. The south-eastern part of the state is a *desert region*, while the south-western is celebrated for its mild winter climate.³



VIEW ON GREAT SALT LAKE, UTAH;—VIEWS IN COLORADO;—UTE PASS, NEAR MANITOU AND COLORADO SPRINGS,—MARSHALL'S PASS, WEST OF PUEBLO,—ESTES PARK,—PIKE'S PEAK, LOOKING OVER THE GARDEN OF THE GODS.

34. **Nevada** is the third state in the Union, in size. Its surface is more than 5,000 feet above the level of the sea.

35. The western part of the state is a dry, treeless region, containing a large number of lakes,³ or sinks.⁴ The vegetation is principally sage-brush and wild grasses.

36. *The silver mines*, which are found in nearly every part of the state, are the chief source of wealth.

37. *Carson City*, on Carson Lake, is the capital.

38. *Virginia City*, built on the site of the Comstock lode,⁵ is a mining center and metropolis.

39. In **Utah**, is Great Salt Lake, the largest salt lake on the Western Continent.⁶

40. *The valley of this lake* is fertile; and, by means of irrigating canals and ditches, immense crops of grain, hay, fruit, and vegetables are raised.

41. *Mining* is an important industry.

42. *Salt Lake City*, the capital, is the chief commercial center, and the seat of the Mormon-church government.

43. *Ogden City* is a railway center.

44. **Arizona** is, like Nevada, a high, mountainous region. Much of its surface is covered with cactus and mesquite.

45. *The Grand Cañon* of the Colorado River is in the northern part.

46. *The principal occupation* is the mining of silver, copper, and gold. Crops of barley are raised along the bottom lands of the Gila (hē'la) River, by means of irrigation.

2. **Gold** is found most frequently in river bottoms and old sedimentary deposits. In order to extract it, a stream of water, under immense pressure, is directed against the auriferous* earth, which is rapidly washed away and carried through a sluice, or canal, made of timber. On the bottom of the sluice*boxes, "riffles," or blocks of wood, are fastened, and quicksilver is poured between them. As the gravel and gold are carried by the swift stream of water through the sluices, the gold, on account of its weight, sinks to the bottom, and is caught by the quicksilver. This method is called *hydraulic mining*. The sediment conveyed into the streams has obstructed the navigation of the Sacramento River, and raised its bed higher than the streets of Marysville and Sacramento, making it necessary to construct levees. Whenever the gold is found in ledges of quartz rock, the latter is crushed by heavy stamps. This is *quartz mining*.

3. **Lake Tahoe** (tā hō'), one of the most beautiful bodies of pure water in the world, is situated among the Sierra Nevada Mountains, about 6,000 feet above sea-level.

4. **The sinks** of this region are not places where the water disappears in underground channels, as has often been asserted; but the water of the rivers, having no outlet, spreads over the ground, until the evaporation equals the supply.

5. **The Comstock lode** is a vein of gold and silver bearing rock, that has produced more bullion than any other mine in the world. Some of the shafts in this lode are more than 3,200 feet deep.

6. The depth of water in **Great Salt Lake** is, at present, increasing. At some period in the past, this lake must have been of great size. Its former shores are plainly visible, on the mountain slope, 500 feet higher than the present surface of the lake. The water of Utah Lake, which is fresh, flows into Great Salt Lake through the Jordan River. Why is one lake fresh, and the other, salt?

7. **Colorado** is bounded by meridians 102° and 109°, and parallels 37° and 41°. Its shape is not a perfect rectangle, however, because a degree of latitude on the southern boundary is about three miles longer than one on the northern boundary—a difference of twenty-one miles between those boundaries.

8. **Besides the mines of precious metals**, there are enormous deposits of coal and iron in this state. The Bessemer steel-works, at Pueblo (pu'bō'w), produce a quality of steel that is unsurpassed.

9. **The elevation of Leadville** is so great that pure water boils at about 192° F.—a temperature twenty degrees lower than at the sea-level. On this account, it is much more difficult to prepare food by boiling.

10. **Several distinct tribes** of Indians inhabit this region. The Apaches (ā pī' chāz) are remarkable for their fine appearance and warlike disposition. The Pimas (pē' maz) and Maracoupas (mā rā kōō' pāz) are peaceful and industrious. The Moquis (mō kēz') inhabit the elevated table-lands. They live in houses, and have but little resemblance to other Indian tribes.

47. *Prescott* is the capital.

48. *Tucson* (tōō sōn'), the principal city, is a mining center.

49. **Colorado** is called the Centennial State.² Its eastern part is situated in the Mississippi Basin; its western, in the Great Basin.⁷

50. *The western part* of the state is crossed by the Rocky Mountains, the numerous spurs and ranges of which inclose beautiful, elevated valleys, called parks.

51. *Mining and cattle-raising* are its chief sources of wealth. In the production of silver, Colorado is the leading state. Nearly every useful mineral is mined here.⁸

52. Owing to the abundance of wild grass, the raising of stock is very extensive.

53. *Denver*, the capital, is the metropolis and railway center of the Rocky Mountain Region.

54. *Leadville*, an important mining town, has an altitude of over 11,000 feet above the sea-level.⁹

55. **New Mexico**, although mountainous, contains large tracts of level country.

56. *Mining and stock-raising* are the chief industries. In the southern part, there are many vineyards and orchards. Most of the people are of Spanish descent.¹⁰

57. *Santa Fe'* (rā), the capital, is, next to St. Augustine, the oldest town, or mission, in the United States.¹¹

11. **Santa Fe'** (*the holy faith*) was an Indian pueblo, or village, of considerable size, when the Spaniards visited it in 1542.

12. **Other important Cities.**—IN CALIFORNIA,—*Oakland*, on the east side of San Francisco Bay, is the western terminus of the principal transcontinental railways. It is noted for its excellent public schools and beautiful residences. *Los Angeles* (lōs āng' ēl ēs) is the center of the wool, wine, and fruit region. *San José* (sān hō sá') and *Stockton* are agricultural centers.

13. IN NEVADA,—*Eureka* (ū rē'kā) and *Gold Hill* are mining centers. *Reno* is the center of the farming region.

14. IN UTAH,—*Pro'vō* and *Logan* are in the center of rich agricultural regions.

15. IN ARIZONA,—*Phoenix* (fē'nīks) is in an agricultural region. *Tombstone* and *Globe* are mining towns. *Yuma* is a river-port.

16. IN COLORADO,—*Pueblo* is the chief railway center of the southern part. *Colorado Springs* and *Man'itō Springs* are famous health resorts. *Georgetown* and *Boulder* are mining towns.

17. IN NEW MEXICO,—*Las Vegas* (lās vā'gās) is a health resort, and the center of a large, farming district. *Albuquerque* (āl būō kēr'kā) is a stock market.

18. **Natural Scenery.**—This region is unsurpassed in the variety and grandeur of its natural scenery, especially that of its valleys, cañons, and mountain passes.

19. **Historical Notes.**—*California* was visited by Cabrillo in 1582. Many Spanish missions were established during the succeeding 200 years. Gold was discovered by Spanish Americans, in Southern California, as early as 1839. The settlement of the state began, however, with the discovery of this metal near the present site of Coloma (kō lō' mā), by James Wilson Marshall, in 1848. Marshall found a bright, yellow metal in the mill-race where he was working. When it was ascertained that the metal was gold, the news rapidly spread, and within a year, an immense immigration began. In 1852, California was admitted as a state. Until the Mexican War, California was a part of Mexican territory.

20. *Nevada* is a portion of the territory ceded by Mexico to the United States, at the close of the Mexican War. It became a state in 1864.

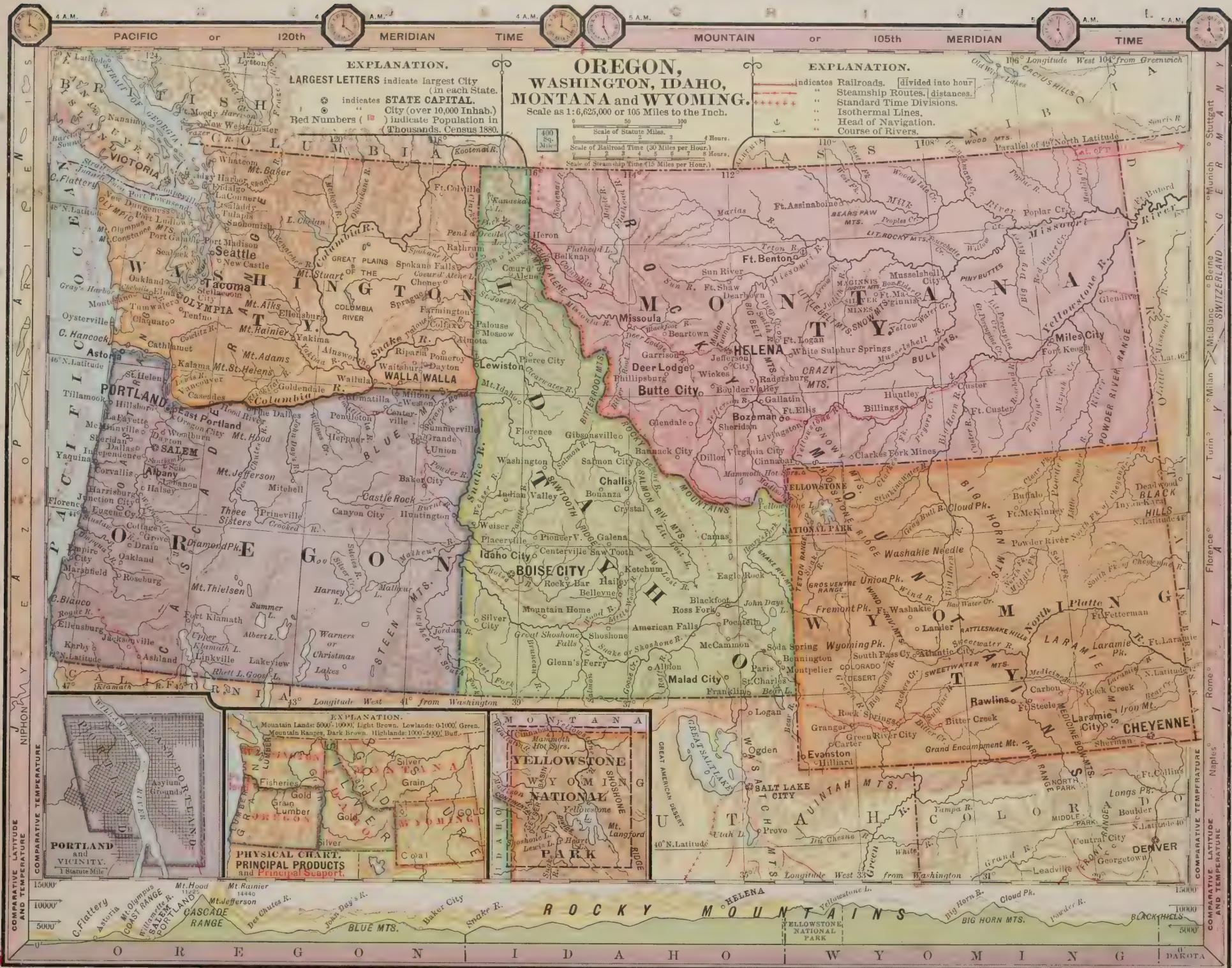
21. *Utah* was settled by the Mormons in 1847.

22. *Colorado* was explored, in 1843, by John C. Fremont, then colonel in the U. S. army. Gold was discovered about fifteen years afterward, and a large immigration followed. The Territory of Colorado was organized from parts of Kansas, Nebraska, New Mexico, and Utah. Colorado became a state in 1876, or 100 years after the Declaration of Independence; hence its title—the Centennial* State.

23. *Arizona* and *New Mexico* are sparsely* settled. Most of the towns and villages have sprung into existence since the discovery of the precious metals.

* *au rīf' er oīs*, producing gold. *spāree' ly*, thinly scattered. [niversary. *sāje*, an artificial passage for water. *pen ten' nī al*, belonging to the hundredth an-

COMPARATIVE TIME (STANDARD) WHEN NOON AT LONDON



OREGON, WASHINGTON, IDAHO, MONTANA, AND WYOMING.

GENERAL QUESTIONS.

Location.—In what part of the United States is this group situated? What ocean west? What British province north? What island north-west? What two straits separate British Columbia from Washington Territory? In what basin are Eastern Oregon, Eastern Washington, and the whole of Idaho situated? Upon what slope is the greater part of Montana (*Món tó' na*)?

Latitude and Longitude.—What parallel on the northern boundary of this group? What celebrated European city is near that parallel? What countries in Europe are situated in the same latitude as this group? What parallel on the southern boundary of Oregon? What meridian on the eastern boundary of this group? What meridian passes through the western parts of Washington and Oregon? Which extends farther west—Cape Flattery, or Cape Blanco? What three cities near the forty-sixth parallel?

Outline.—What trend has the coast of this section? How does it compare with the direction of the adjacent mountain chains? Which of the territories of this group are nearly rectangular in shape? Which one is nearly triangular?

Mountains.—What mountain chains cross this group? What is the highest peak? In what range is it? Mention two short mountain ranges between the Rocky and the Cascade Mountains.—three short ranges east of the Rocky Mountains. What mountains west of the Cascade Range?

Rivers.—What river and its tributaries drain the land east of the Rocky Mountains?—most of the region between the Cascade Range and the Rocky Mountains? In what part of this section have the rivers no connection with the ocean? In what direction do most of the rivers of Oregon flow?—of Washington?—of Idaho?—of Montana? What river has cut its channel through the Cascade Range? What river and sound in the depression between the Cascade and Coast ranges?

Climate and Products.—What peculiarity of direction have the isotherms of this region? Which has the lower mean annual temperature—Southern Wy o'ming, or Northern Washington? Mention the principal products of Oregon and Washington,—of Idaho and Montana,—of Wyoming. In what part are the grazing lands? What river is celebrated for its fisheries? Where are the lumber regions?

Cities.—Mention the largest city in this group. What is the largest city in Washington?—in Oregon?—in Idaho?—in Montana?—in Wyoming? What city is the chief sea-port of this region? What river-port at the head of navigation on the Missouri River? What port near the mouth of the Columbia River?

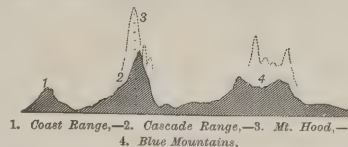
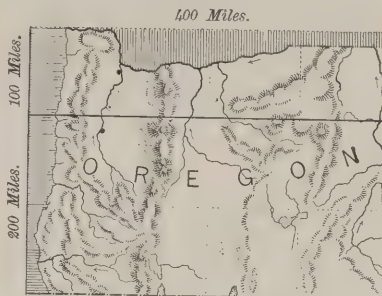
Commercial Geography.—In what part of this section are the principal sea-ports? Mention three navigable rivers. By what route may a vessel go from Portland to Olympia? With what city in California has Portland steam-ship connection?—with what city of Washington?—with what port of Alaska? By what railway routes may merchandise be transported to the Atlantic Coast? What means of communication between Portland and Lewiston?—between Fort Benton and Miles City?—between Portland and Salem? What

1. The ridge, or water-shed, separating the sources of the Columbia from those of the Missouri, is called the great Continental Divide. Notice that it does not coincide with the summit of the Rocky Mountains.

divisions of standard time cross this section? When it is noon at London, what is the standard time in Montana?—in Oregon and Washington?

OREGON.

What river flows between Oregon and Washington?—Oregon and Idaho? What parallel on the southern boundary? What ocean west?



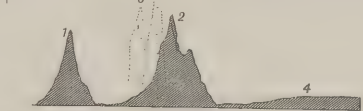
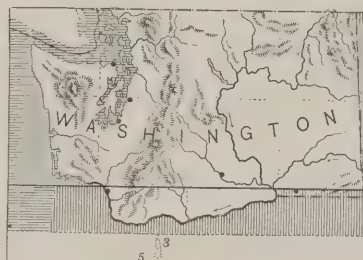
1. Coast Range.—2. Cascade Range.—3. Mt. Hood.—4. Blue Mountains.

Mention its capital,—its largest city,—other large cities.

Map Drawing.—Draw a map of Oregon, as directed on page 37. What is its extent from east to west?

WASHINGTON TERRITORY.

What natural boundaries has Washington Territory?



1. Mt. Olympus.—2. Cascade Range.—3. Mt. Rainier.—4. Pt. of Columbia River.—5. Mt. Baker.

What two straits separate it from Vancouver Island? Describe the Columbia River,—the Snake River.

What sound indents the coast of this territory? What tributary of the Columbia River in the south-west?

Mention its capital,—its largest cities. Where is Mt. Rainier?—Mt. Olympus?—Mt. St. Helens?—Mt. Baker?

Map Drawing.—Draw a map of this territory, as directed on page 37. What is its extent from east to west?—from north to south?

IDAHO TERRITORY.

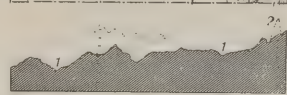
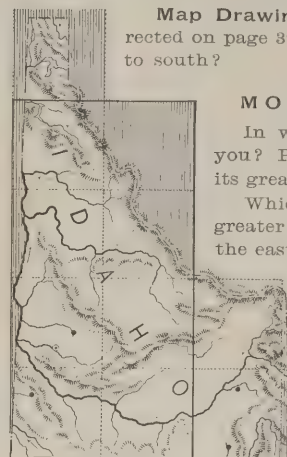
What mountains between Idaho and Montana?

By what river is the southern part drained?—the northern part? Mention its capital,—three other cities.

2. The Pacific Coast of this group is connected, commercially, with the Atlantic Coast by the Northern Pacific Railway, via St. Paul, Minnesota; and by the Oregon Short Line Railway, via Ogden, Utah.

What mountains in the north-east?—in the south-east? What river and valley are between the Coast and Cascade ranges? Mention two lakes which have outlets,—two, which have no outlets.

What part of this state is drained by the Columbia River and its tributaries? Mention its tributaries. What rivers in Western Oregon are not tributaries of the Columbia?



1. Snake R.—2. Snake River Mts.

Map Drawing.—Draw a map of Idaho, as directed on page 37. What is its extent from north to south?

MONTANA TERRITORY.

In what direction is Montana from you? Point toward it. In what basin is its greater part?

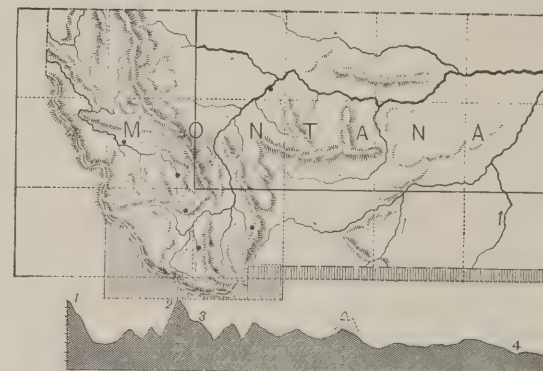
Which part of this territory has the greater elevation above the sea-level—the eastern, or the western?

Mention its largest rivers.

Of what is the Yellowstone a tributary?—the Missouri? What river flows into the Yellowstone near its head of navigation? What lake in the north-western part? Where is the Milk River,—the Musselshell?

Mention the capital of Montana?—the largest cities? What mines in Montana?

Map Drawing.—Draw a map of Montana, as directed on p. 37.

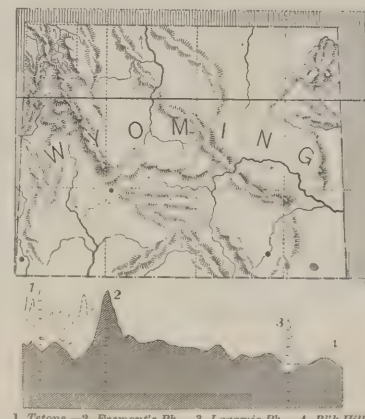


1. Eagle Peak.—2. Great Divide.—3. Helena.—4. Yellowstone River.

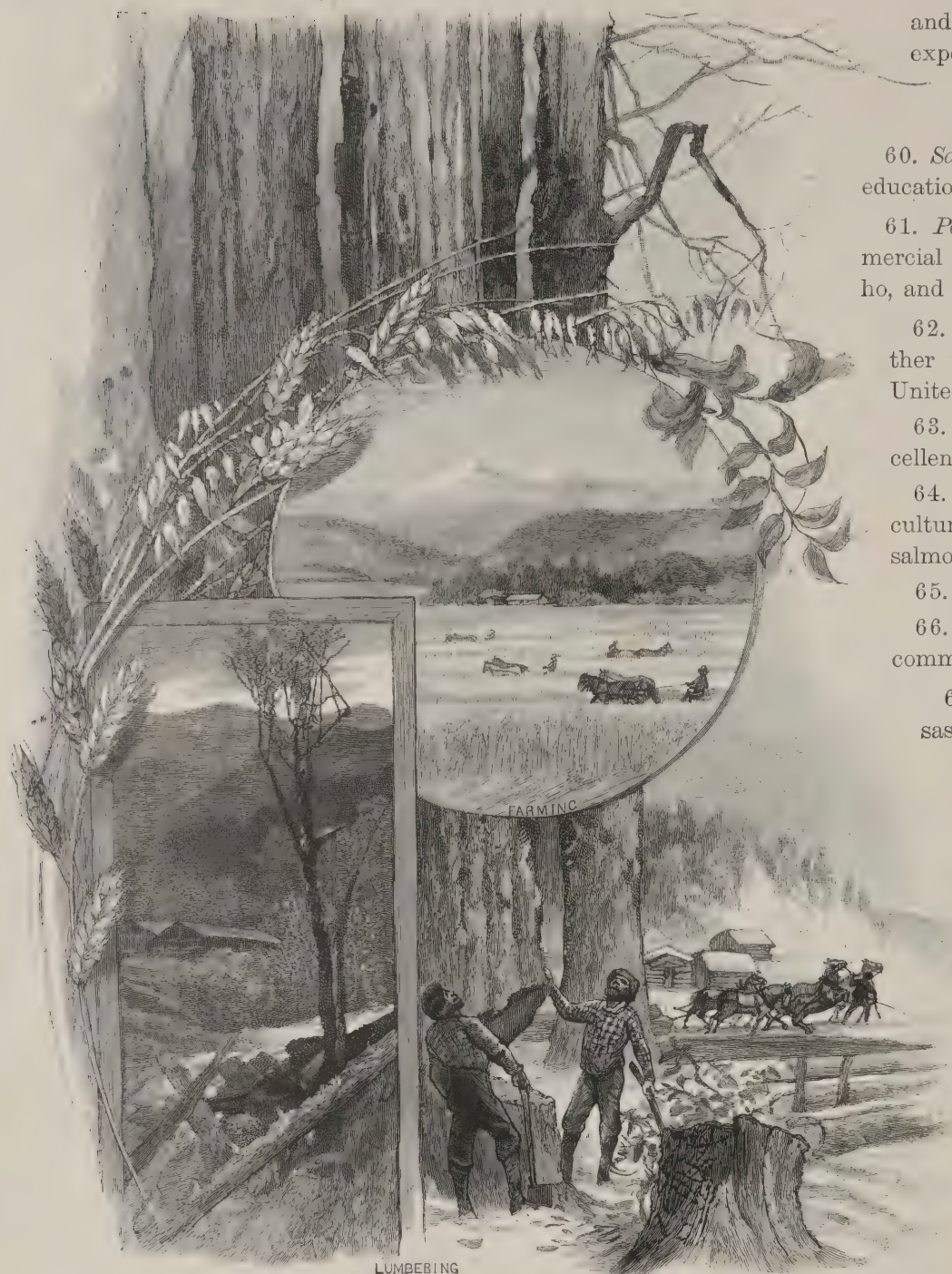
WYOMING TERRITORY.

In what direction is Wyoming from Montana? What park north-west? What mountains are in Wyoming? Where is the Big Horn River? Into what does it flow? Where does the Yellowstone rise?—the North Platte? Where is Yellowstone Lake? What desert in the western part of Wyoming?

What is the capital of Wyoming? Where is Laramie City?—Rawlins?—Evanston.



1. Tetons.—2. Fremont's Pk.—3. Laramie Pk.—4. Bk Hills.



SCENES IN OREGON AND WASHINGTON TERRITORY.

58. **Oregon** is the most western state in the Union. West of the Cascade Range, are several fertile valleys, of which the Willamette is the most important. East of that range, is a plateau, known as Eastern and Southern Oregon.

59. *Wheat* is the principal product. Oats, barley, apples, pears, etc., are raised in abundance. The forests of pine, fir,

1. The **lumber-mills** of Washington Territory are the largest in the world. The straight, tough fir-trees, many of them exceeding three hundred feet in height, are unsurpassed for masts and spars of vessels. The most productive coal mines on the Pacific Coast are in this territory.

2. **Pend d'Oreille** (*pend do reel'-ear-ring*) and **Cœur d'Alene** (*kur ā lān—the heart of Alene*) lakes, renowned for the grandeur and beauty of their scenery, are favorite summer resorts. *Shō shō'ne Falls* rival Niagara, in magnificence. For miles

and cedar are extensive, and lumber is exported, in large quantities. Stock-raising, mining, and salmon-fishing are, also, important.

60. *Salem*, the capital, contains excellent educational institutions.

61. *Portland*, the metropolis, is the commercial center of Oregon, Washington, Idaho, and Western Montana.

62. **Washington Territory** extends farther west than any other part of the United States, excepting Alaska.

63. *Puget* (pū'jet) *Sound* affords excellent harbors.

64. The leading industries are agriculture, lumbering,¹ ship-building, and salmon-fishing.

65. *Olympia* (ō līm'pī a) is the capital.

66. *Walla Walla* (wōl'ā wōl'ā) is the commercial center of the eastern part.

67. **Idaho** is a little larger than Kansas. It is remarkable for the picturesque scenery of its mountains, lakes, and water-falls.²

68. Nearly all the *valuable minerals and metals* are found here. Gold and silver mining, and stock-raising, are the sources of wealth.

69. *Boise* (boi'zē) *City*, the capital and metropolis, is the center of an important mining region.

70. *Lewiston* is at the head of navigation on Snake River.

71. **Montana** is nearly twice the size of Kansas. Its surface, except in the north-eastern part, is rugged and mountainous.³

72. *Mining and stock-raising* are the chief industries.

73. *Hel'ena*, the capital, is the center of a rich mining region.

74. **Wyoming** contains a part of the great continental divide, or water-shed, of the United States, and some of the sources of the Mississippi, the Columbia, and the Colorado.

above and below the falls, the Snake River passes through a volcanic cañon, nearly 1,000 feet in depth. The height of the main fall is 210 feet. The Three Tetons (*tā tōns'*), extending into Idaho and Wyoming, are famous landmarks to travelers. The *Grand Teton*, or *Mount Hayden*, is more than 13,800 feet above the level of the sea.

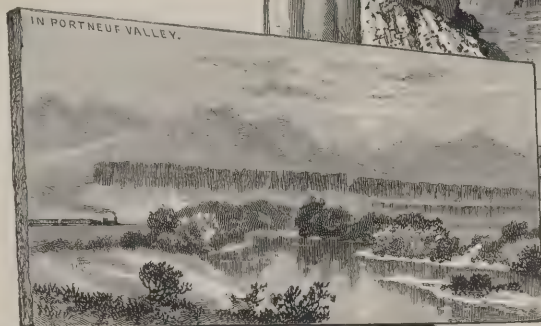
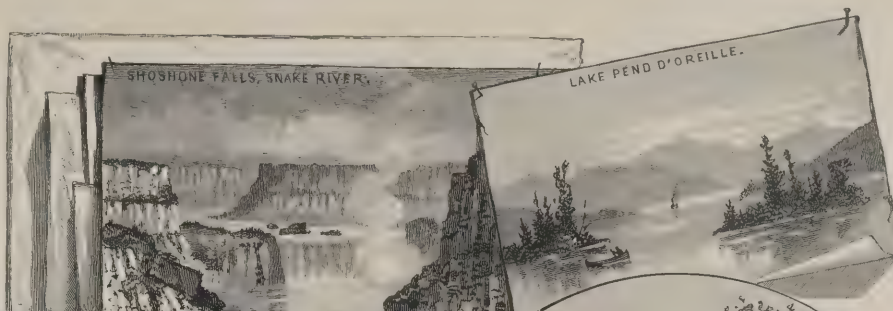
3. **Mauvaises Terrés** occupy the greater part of the region between the Yellowstone and Missouri rivers. Some of the river cañons rival in extent, the Grand Cañon of the Colorado.

75. *Stock-raising* is the leading employment. In the south-west, are valuable coal mines.

76. *Cheyenne* (shī ēn'), the capital and commercial center, is an important cattle market.

77. *The Yellowstone National Park* contains beautiful lakes and cataracts, the Grand Cañon of the Yellowstone River, and the most remarkable geysers and boiling springs in the world.¹²

78. *Alaska* occupies the north-western portion of North America. One third of the territory is situated within the Arctic Circle. Its area is about one sixth that of the United States.⁴



79. *The climate* of the Pacific Region is mild and moist, while that of the Arctic Slope and the interior is extremely cold.⁵

80. *The Arctic Slope* is remarkable for frozen swamps; the *Pacific Slope*,

chief seal-fisheries of the world.⁶

82. *Most of the inhabitants of Alaska* are Indians.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about this section, as directed on page 43.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on this section, as shown on page 43.

4. *The Aleutian Islands* consist of a chain of peaks, rising to a height of a few hundred feet above the sea-level. They are all of volcanic origin.

5. *The Yukon River* is one of the longest rivers on the continent. Lieutenant Schwatka, who descended it on a raft, reports its length to be 2,044 miles.

6. *The male seals* are about seven feet in length. They begin to land on St. Paul Island about the middle of May; and, from this period until the landing of the female seals in June, are engaged, chiefly, in fighting for possession of their respective places. These are over four feet in length. The pelts, or skins, are taken from the young male seal only. The seals are killed by striking them on the head. The pelts are dressed, and the long hairs plucked from them, leaving the dark, gray fur, which is then dyed.

7. *Other important Cities.*—IN OREGON,—*East Portland* is a railway terminus. *Albany* is situated in the midst of a rich agricultural district. *The Dalles* is the center of an extensive trade with Eastern Oregon and Idaho. *Astoria* is the center of the salmon packing interest.

8. IN WASHINGTON TERRITORY,—*Seattle* (sē āt' tī) and *Tū cō' mā* are important trading centers and lumber markets.

9. IN IDAHO,—*Challis*, *Mā lā' City*, and *I' da hō City* are the trading centers of mining districts.

10. IN MONTANA,—*Butte* (būt) *City* is a mining town. *Fort Benton* is at the head of navigation on Missouri River.

11. IN WYOMING,—*Lā' a mie City* is a cattle market. *Ev' ans ton* is the center of the coal-mining region.

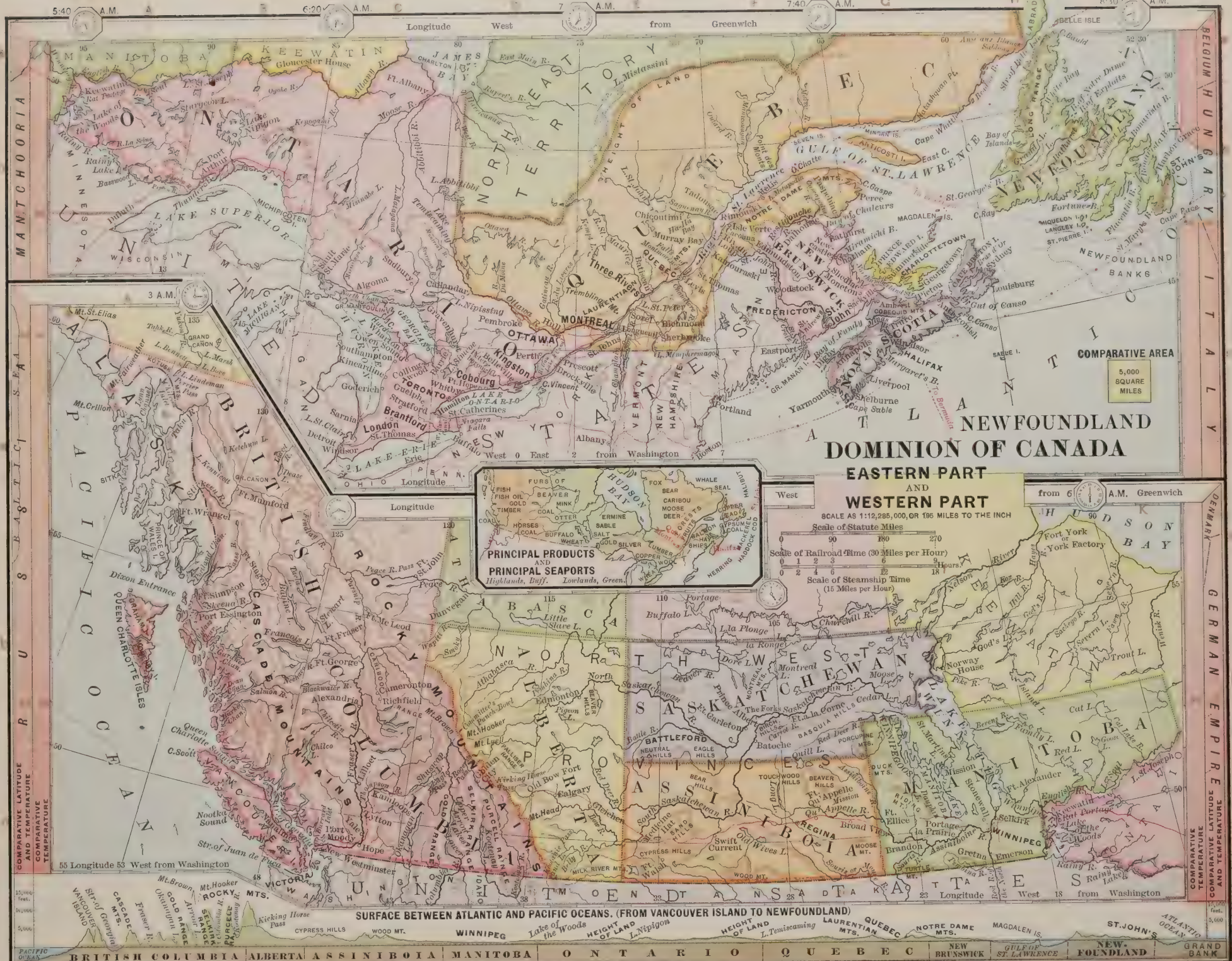
12. *Natural Scenery.*—Among the objects of interest in this region are the cascades and dalles of the Columbia River, the Spokane' Falls in Washington, and the glaciers of Mt. Rainier (rā' nēr). The lakes of Northern Idaho are favorite hunting-grounds, and attract tourists from all parts of the country. The Yellowstone Park, the "wonderland of America," contains over 1,000 geysers and hot springs. Some of these geysers send up great jets of hot water to the height of two hundred and fifty feet. The park is about sixty-five miles long, and fifty-five miles wide. It is under the control of the Secretary of the Interior.

13. *Historical Notes.*—*The Columbia River* was discovered by Captain Grey, in 1792. This territory was explored by Lewis and Clarke in 1804. The Territory of Oregon embraced what is now Oregon, Washington, and Idaho. Oregon was admitted into the Union, as a state, in 1859.

14. *Montana* and *Wyoming* formed a part of Missouri Territoriy. Father de Smet, a Jesuit missionary, spent many years among the Indians of this region, and founded several missions. These territories have been the scenes of much bloodshed, owing to frequent Indian wars. In 1870, General Custer and his entire command were surrounded and massacred by the Sioux (sō), under their famous chief, "Sitting Bull."

15. *Alaska* was purchased of the Russian Government in 1867. It was organized as a territory in 1884.

COMPARATIVE TIME WHEN NOON AT LONDON.



DOMINION OF CANADA AND NEWFOUNDLAND.

GENERAL QUESTIONS.

Location.—In which grand division are these provinces? In what part? What ocean is the northern boundary of the Dominion of Canada? (*See page 28.*) What is the eastern boundary?—the western?—the southern? What territory forms its north-western boundary?

Latitude and Longitude.—What countries in the Eastern Hemisphere are in the same latitude as the southern part of the Dominion? In what longitude is the eastern part of Newfoundland?—the western part of British Columbia?

Outline.—What large gulf indents the eastern coast of the Dominion? What provinces border on this gulf? What strait north-east? What large island in its northern part?—north of Lake Huron?—in the south-western part of British Columbia? By what is this island separated from the mainland? What other islands belong to British Columbia? Where are the Mag'dalen Islands? What peninsula in the south-eastern part of the Dominion? What island east of that peninsula?—north? Which is the most eastern province?—its most eastern cape?—city? Which province extends farthest south? What cape projects from British Columbia?

Surface.—Where are the lowlands of the southern part of the Dominion? To what system do the mountains of the western part of the Dominion belong? Mention the principal ranges,—two high mountains. (*See profile.*) About how high are they above the level of the sea?

Lakes.—What lakes are on the southern boundary of the Dominion? With what gulf are the Great Lakes connected? Where is Lake of the Woods?—Rainy Lake? With what lake are these two connected? Into what bay does its water flow? What large lake in North-East Territory?

Rivers.—What river is the outlet of the Great Lakes? In what direction would you sail in going up that river? In what direction does it flow? Into what? Mention three tributaries of this river from the north. What large river flows through the territory of Saskatchewan? Where is the source of the Athabasca River? By what other name is its lower course known? (*See map of North America.*) Where is the source of the Yukon River? What large river west of the Rocky Mountains? What is its general course? Into what does it flow?

Climate.—Which part of the Dominion is warmer—the eastern, or the western? What part is crossed by the isotherm of 40° Fahr.?—of 30° Fahr.? About how long is the longest day at the latitude of Hudson Bay? (*See page 28.*)

Products.—What are the principal minerals?—grains?—fisheries? Where are the forests? From what animals are furs obtained? (*See chart of principal products.*)

Cities.—What is the capital of the Dominion?—the metropolis? Where is Ottawa situated? Montreal? Toronto?

Commercial Geography.—Mention the principal sea-ports. From what cities and by what routes do steamers sail to Europe? In what direction from Albany is Montreal? In what part of the Dominion is there railroad communication between the Atlantic and the Pacific Ocean? What place is the western terminus of this route?

BRITISH COLUMBIA.

In what part of the Dominion is British Columbia? What is its western boundary?—its southern boundary? What large islands belong to it? What is the capital?



What mountain ranges in British Columbia? What large river in the south-western part? In what part of the province is gold found?—coal? Where is Port Moody?

MANITOBA.

What is the southern boundary of this province?—its northern?—its eastern? In what part are its mountains? Mention its three large lakes. What large river flows through the south-western part?—the south-eastern?—the southern? What isotherm crosses this province? Mention the principal city.

ONTARIO.

What large bay north of Ontario? What lakes on its southern boundary? What bay opens into Lake Huron? By what is Ontario bounded on the north?—on the east? country south and west? In what part is Lake Nipigon?—Lake Nipissing? Where are gold and silver found?—where is copper found? Where is wheat raised? Mention and locate its principal cities. Which is its capital?

QUEBEC.

In what direction from Ontario is this province? By what is it bounded on the north?—on the east? What province and country south? What gulf indents the eastern coast? Where is the Height of Land? In what direction does the surface slope? Where is the source of the Ottawa River? Between what provinces does it flow? Of what lake is the Saguenay (*sag en a'*) River the outlet? Mention the principal river. Of what is it the outlet? Where are the Falls of Montmorency? Mention the capital,—the largest city.

NEW BRUNSWICK.

In what part of the Dominion is New Brunswick? What province north of it?—water east?—province south-east?—water south?—country west? What two bays indent the eastern coast? What island south-east of New Brunswick? What river on the north-eastern boundary?—on the south-western boundary?—on the north-western boundary? Which of these rivers flows through New Brunswick? Where is its source?—its mouth? Mention two large cities. Which is the capital?

NOVA SCOTIA.

Of what two natural divisions of land does Nova Scotia consist? What natural division is its larger part?—its smaller part? By what waters is Nova Scotia almost surrounded? What cape projects from the eastern coast of the peninsula?—from its southern coast? What fisheries off the coast? Mention and locate the principal city. Where is Annapolis?

PRINCE EDWARD ISLAND.

What waters surround this province? In what direction is it from New Brunswick?—from Nova Scotia? What is its capital? What islands north-east?

NEWFOUNDLAND.

In what direction from the mainland is this province? What ocean east and south?—gulf west? What strait separates it from Labrador? What bays indent the southern coast? Mention the most northern cape,—eastern,—western. What mountains in Newfoundland? What minerals are found there? What kinds of fish are caught off the coast? Mention the capital. Where is it? Where are the Newfoundland Banks? Where is Placentia Bay?

TERRITORIES, OR DISTRICTS.

What two territories, or districts, are east of British Columbia?—east of Alberta? Through what does the Saskatchewan River flow?—the Athabasca?—the Nelson? Where is Keewatin (*ke wi tin*)?—North-East Territory?—Regina?

BRITISH AMERICA.

1. **British America** comprises the Dominion of Canada and the province of Newfoundland.

2. **The Dominion of Canada** embraces the provinces of British Columbia, Manitoba (mán'ī tō bā'), Ontario, Quebec', New Brunswick, Nova Scotia, and Prince Edward Island, besides several territories and districts. Its area is about equal to that of the United States.

3. **The surface** is mostly a vast plain, bordered by a high plateau in the west, on which stand the Rocky Mountains and the Cascade Range.

4. **A chain of lakes**¹ extends from the mouth of the Mackenzie River to the Great Lakes. The St. Lawrence, Nelson, and Mackenzie rivers drain the principal basins.

5. **The Arctic Archipelago** is a cold, desolate region.

6. **The Magnetic North Pole** is situated near the western coast of Boothia (bōō'thē ā) Peninsula.

7. **The climate** of the Pacific Slope is mild; but elsewhere, the winters are of great severity. The summers are short, and in the southern provinces, hot.

8. **A belt of timber**, mostly pine, extends from the Rocky Mountains to the Atlantic Ocean. The Pacific Slope is covered with forests of fir; the valley of the St. Lawrence contains growths of maple, oak, and elm.

9. **The central prairie regions** are covered with luxuriant crops of wild grasses, and, where cultivated, yield large crops of grain.

10. **The wild animals** comprise the bison, bear, moose, wolf, beaver, otter, ermine (ēr'mīn), mink, and marten, most of which are hunted for their skins. The coast waters abound in seal, cod, and salmon.

11. **The minerals** comprise gold, silver, and coal, which are mined in the west, and copper, which is found near Lake Superior. Coal is mined in Nova Scotia, also.

12. **The chief industries** in the eastern provinces are lumbering and fishing. The central regions are agricultural. The uninhabited regions of the north yield valuable furs, in great quantities.

13. **Most of the inhabitants** are of English descent. In the eastern provinces, however, there are many descendants of the early French settlers.

14. **The government** of the dominion is vested in the Governor-General and Parliament. The Governor-General is appointed by the sovereign of Great Britain. Parliament consists of a Senate and a House of Commons. The

members of the Senate are appointed by the Governor-General. The members of the House are elected by the people. Each province has a Lieu ten'ant-Governor, and a legislature.

15. **Ottawa** is the capital of the Dominion of Canada. It contains magnificent public buildings.

16. **British Columbia**, including Vancouver and other islands, is the largest and most mountainous province of the dominion. Its mines of gold and coal are valuable. Lumber, fish, and wool are exported.

17. **Victoria**, on Vancouver Island,² is the capital and metropolis.

18. **Manitoba** is noted for wheat and furs.³

19. **Winnipeg** (wīn'ī pēg), the capital, is the agricultural and commercial center.

20. **Ontario**, the most important province, contains nearly one third the population of the dominion. Grain, fruit, and lumber are the principal products. Petroleum, copper, and iron are obtained near Lake Superior.⁴

21. **Toronto**, the capital of the province, is noted for its manufactures and educational institutions. It is an important railway center and lake-port.

22. **Hamilton**, situated near the western extremity of Lake Ontario, is an important lake-port and manufacturing center.

23. **Quebec** is hilly. Its winters are extremely cold; its summers, warm, short, and foggy.

24. **Its agricultural region** is south of the St. Lawrence, and produces good crops of oats, potatoes, and hay. The most valuable export is lumber.

25. **The people** of this province are, chiefly, descendants of early French settlers.

26. **Quebec**, the capital, is the oldest city in the dominion. The heights, on which the upper portion of the city is built, are strongly fortified.⁵ The principal business part of the city occupies the low ground.

27. **Montreal**, the metropolis, is noted for its magnificent cathedrals, and the tubular bridge* across the St. Lawrence River.

28. **New Brunswick** is noted for lumber and ship-building.⁶

29. **Fredericton** is the capital of New Brunswick.

30. **St. John** is the metropolis and largest port.

1. **The lakes and rivers** of the central region form such a net-work, that, during part of the year, portage, or canoe communication, may be effected between the different rivers, or even between the Great Lakes and Hudson Bay.

2. **Vancouver** (van kōō' ver) was an English navigator, who discovered the island, and explored much of the North Pacific Coast region.

3. **Steamers** ply on the Red River of the North, and on Manitoba and Winnipeg lakes.

4. **Welland Canal**, connecting lakes Erie and Ontario, and Rideau (re dō') Canal, be-

tween Lake Ontario and Ottawa River, enable vessels to pass from the Great Lakes to the ocean, thereby avoiding Niagara Falls and the rapids in the St. Lawrence River.

5. **The fortress of Quebec**, next to that of Gibraltar, is considered the strongest in the world. It was, however, captured by General Wolfe during the French and Indian War.

6. **The Bay of Fundy** is remarkable for its high tides and the rapidity with which the tide wave travels.

* *tā' bu lar bridge*, a bridge in the form of a tube, made of iron plates riveted together.



NIAGARA FALLS,—COD-FISHING,—CITY OF QUEBEC,—COAL-MINING,—HUNTING THE MOOSE.

31. **Nova Scotia** has more sea-coast than any other province. Ship-building and the fisheries constitute the chief industries. Its coal-fields are extensive. Gold and gypsum (jīp'sum) are also mined.

32. *Halifax*, the capital, has an excellent harbor, and is the chief British naval station in North America.

33. **Prince Edward Island**, the smallest province, is the most densely populated. Agriculture and fishing are the chief occupations; fish and eggs, the principal exports.

34. *Charlottetown* (shār'lōt town) is the capital.

35. **Newfoundland** is noted for its barren soil, cold climate, and dense fogs.⁷

36. Its cod, salmon, and seal fisheries give employment to about nine tenths of the inhabitants.

37. *St. John's* the capital, is the most easterly city in North America, south of Greenland.⁸

7. The dense fogs which prevail in this latitude, are due to the meeting of the cold, Arctic Current with the warm waters of the Gulf Stream. During the spring and summer, icebergs and pack-ice are brought down by the Arctic Current, and drift about until melted. It is for this reason, that the steam-ship route between America and Great Britain is one of the most dangerous in the world.

8. The District of Labrador is under the control of Newfoundland.

9. **Hudson Bay Company**, an English corporation, was organized by Prince Rupert and others, to whom was granted the exclusive privilege of trade and commerce in this region. The chief traffic was in furs. The land was purchased from this company, by the Dominion government, in 1869.

38. **The Territories** were formerly owned by the Hudson Bay Company.⁹

39. *The southern portions* are becoming important wheat-raising regions. *Regina* (rē jī' nā) and *Battleford* are fur-trading centers.

LUMBERING

40. *Most of the inhabitants* of the territories are Indians.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about the Dominion of Canada, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on the Dominion of Canada, as shown on page 32.

10. **Historical Notes.**—The French claimed Canada by right of the discovery by Cartier (*kār tyā*). French missionaries explored the St. Lawrence and parts of the Mississippi Valley, and their labors with the Indians, who soon became their steadfast friends, bore testimony to their honor and sincerity. The English claimed the territory by virtue of Cabot's discovery. Several wars resulted from the opposing claims. The last, known as the French and Indian War, was a bitter struggle which ended in the cession of the country to England.

11. *Nova Scotia* (New Scotland) was first settled by the French, who called it Acadia. During the French and Indian War, it fell into the hands of the English, and many of the inhabitants were driven into exile.

4:40 A.M. Longitude West from Greenwich 5:20 A.M.





GATHERING COCHINEAL FROM THE CACTUS PLANT.

A FOUNTAIN.

WATER-CARRIERS.

VANILLA.

MEXICO, CENTRAL AMERICA, AND THE WEST INDIES.

MEXICO.

Location.—In what direction is Mexico from the United States? What two rivers form part of the boundary between Mexico and the United States? What large gulf east?—west? What ocean west and south? What sea south-east? What tropic crosses the central part? In what zone is the southern part?—the northern part?

Outline.—In what general direction is the trend of the western coast? How does this direction compare with that of the mountain chain? What peninsula in the north-western part? What gulf and bays indent the western coast? Where is the Gulf of Tehuantepec (*ta wán ta pēk'*)? What cape at the southern extremity of Lower California? Where is Cape Corrientes (*kōr rē ēn' tēs*)?—Cape Roxo?—Cape Catoche (*kā tō chā'*)?

Surface.—Of what does the greater part of the surface consist? *Ans.* A high plateau, called the Mexican Plateau. In what part of Mexico are the Sierra Madre (*sē ēr'rá mā' drā*) Mountains? Where are the lowlands? Where is Volcano Popocateptl?—Volcano Orizaba (*ō re thā' bū*)?—Volcano Colima (*kō lē mā*)? What part of the Colorado River is in Mexico?

States.—In what part of Mexico is Sonora (*sō nō' ra*)?—Chihuahua (*chā wā' wā*)?—Coahuila (*kō ā wē' lā*)?—Tamaulipas (*tā mow lē' pās*)? In what part is Vera Cruz (*vē' rā krōōth*)?—Guerrero (*gē' rā' rō*)?—Yucatan?—Jalisco (*hā lēs' kō*). In what state is the capital of Mexico?

Climate and Products.—What isotherm crosses the southern part? What minerals are obtained in Mexico? What grains? What fruits?—other tropical products? Where are the pearl oyster fisheries?

Cities.—What is the capital of Mexico? What large city in Guana-juato (*gwā nā hwa' tō*)?—in Jalisco? Where is Matamoras (*māt a mō' ras*)? What sea-ports on the Gulf Coast?—on the Pacific Coast?

Commercial Geography.—What railway connects the city of Mexico with the leading cities of the United States? *Ans.* The Mexican Central, by way of El Paso (*ēl pā'sō*). Where is the narrowest part of Mexico? What isthmus is it? What is its width? (*See scale of miles.*)

CENTRAL AMERICA.

Location.—In what direction is Central America from the United States?—from Mexico?—from South America? What sea north-east? What ocean south-west? In what zone is Central America?

Outline.—In what direction is the trend of the western coast? What bay indents the northern coast?—the western coast? What gulf washes the south-eastern coast? Where is Cape Gracias a Dios (*grā' sē ās ā dō' sēs*)?

Surface.—Is Central America a highland, or a lowland, region? Mention three high volcanoes. Where are they? Mention two lakes. Which is the larger of these lakes? What is its distance from the Pacific Coast? With what sea is it connected? How wide is the Isthmus of Panama?

Countries.—What republic in the north-western part of Central America? What British colony in the northern part? Where is Honduras (*hōn dōw' ras*)? Which of these republics border on the Pacific Ocean and the Caribbean Sea? Which borders on the Pacific Ocean only? Which is the smallest?—the most southern? Which contains the largest lakes?

Climate and Products.—What is the mean annual temperature of Central America? Mention its principal products.

Cities.—Mention the largest city in Central America. Of what is it the capital? Of what republic is Tegucigalpa (*tē gōō sē gāl' pā*) the capital?—San Jose (*sān hō sē'*)? Mention the capitals of the other republics.

THE WEST INDIES.

Location.—What part of the United States is nearest the West Indies? Point toward the West Indies. Which is the most northern of these islands?—the most southern? What is its latitude?

Surface.—Which is the largest island of the West Indies? In what part are its highest mountains?—its lowlands? Which is the next in size? What is the character of its surface? What republic forms its eastern portion?—its western? Which is the larger of these two republics?

Islands.—In what group are the four large islands comprised? What group north of Cuba?—east of Porto Rico? Where are the Windward Isles? What group west of the Windward Isles? Where is the Island of St. Thomas?—Trinidad? Where are the Barbadoes (*bār bā' dōz*)? What island was the first land discovered by Columbus?—when? Where is it? Between what two islands is Windward Passage?—Mona Passage? Between what bodies of land is the Channel of Yucatan?—Florida Strait?

Cities.—Where is Havana?—Matan'zas?—Port au Prince?—Kingston?—Puerto Principe (*puē' tō prēn' se pā*)?—Nas'sau?—San Juan (*sān hōō ān'*)?

Commercial Geography.—In what direction does the water of the Caribbean Sea flow?—of Florida Strait? On what waters would you sail from New Orleans to Havana?—from New York to Havana?—to the Isthmus of Panama?—from Vera Cruz to Nassau?—to Trinidad?

1. The Isthmus of Panama is crossed by railroad. Commercial routes between the Atlantic and Pacific oceans, proposed, or under construction, are the Panama Canal, across the Isthmus; canals connecting with Nicaragua Lake; and a ship railway across the Isthmus of Tehuantepec.

MEXICO, CENTRAL AMERICA, AND THE WEST INDIES.

1. **Mexico** is a republic, composed of twenty-seven states, a federal* district, and the Territory of Lower California.¹ It is situated in the North Temperate and the Torrid Zone. The Tropic of Cancer crosses the center of the country. Mexico is about one fourth the size of the United States.

2. **The surface** is a high plateau, fringed by a belt of low, narrow coast. Several ranges of the Rocky Mountain System, of which the Sierra Madre (sē ē' rā mā' drā) is the highest, extend through the country from north-west to south-east.

3. **A remarkable chain of volcanoes**² crosses the highest part of the plateau. The summits of several of these are above the limit of perpetual snow. Vol. Popocatepetl is the highest mountain in Mexico, and, next to Mt. St. Elias, the highest in North America.

4. **The lakes** are small and unimportant. Most of them are situated in the Valley of Mexico. Tezcuco (tēs kōō' kō) the largest, is navigable.

5. **The rivers** are short, and, excepting the Rio Colorado and Rio Grande, not navigable above tide-water.

6. **The climate** is hot and pestilential along the narrow coast, but mild and healthful in the high interior. In going from Vera Cruz to the city of Mexico, one may, within a few hours, experience nearly every gradation of climate, and find the productions peculiar to each zone. There are but two seasons; the rainy, and the dry.

7. **The vegetable productions** comprise mahogany, rose-wood, mesquite,³ various dye-woods, the agave,⁴ and

cactus.⁵ Oranges, lemons, pine-apples, olives, and bananas are extensively cultivated. Tobacco, corn, sugar-cane, cocoa,⁶ beans, coffee, vanilla,⁷ and the indigo-plant are also grown.

8. **The wild animals** of Mexico comprise the grizzly bear, puma or Mexican lion, and coyote. Venomous* reptiles and insects are numerous.⁸ Cattle, horses, and donkeys, in vast numbers, are the principal domestic animals.

9. **The minerals** include gold, silver, tin, quicksilver, and marble.⁹

10. **The leading industries** are agriculture, stock-raising, and mining. Coffee, sugar, cotton, cochineal, vanilla, metals, hides, and ornamental woods are exported. Great progress has been recently made in the building of railroads; but the unsettled condition of the government depresses every kind of industry.

11. **The people** consist chiefly of mixed races: those of Spanish and Indian origin, being called mestizos (mēz tē' zōs), and of Negro and Indian origin, zambos (zām' bōz). About one tenth are Creoles,¹⁰ or descendants of Spanish colonists. Spanish is the language of the country.¹¹

12. **Mexico**, the federal capital, is the metropolis. It is situated in the Valley of Mexico, and has an elevation of about 7,400 feet above the sea-level.

13. **Guadalajara** (gwā dā lā hā' rā) and **Puebla** (pwēb' lā) are manufacturing centers.

14. **Vera Cruz** is the chief Atlantic sea-port.

15. **Acapulco** (ā kā pōōl' kō) and **Guaymas** (gwī' mās) are the principal ports on the Pacific Coast of Mexico.

1. The official title is, *Estados Unidos de Méjico*,—the United States of Mexico.

2. Most of these volcanoes show signs of activity. Popocatepetl constantly emits vapors. Its crater is large, and contains immense deposits of sulphur. The site of Jorullo was formerly a level, cultivated plain. In 1759, a series of violent earthquakes occurred, which continued for several months. Then, without warning, the ground burst, and a fissure,* several miles long, formed. Enormous quantities of lava, ashes, and scoria were ejected.* Within twenty-four hours, six volcanic cones had been formed, the highest of which is now Jorullo. During the past few years, however, activity has almost wholly ceased, and vegetation now covers the sides of the mountain, nearly to the rim of the crater.

3. The wood of the **mesquite** is prized for its fine brown color. The foliage is an excellent fodder,* and is often the only food of the animals which form the numerous pack-trains.* The bean of the mesquite is an excellent substitute* for the ordinary bean or frijole (*fri ho' la*). It is frequently used as an article of food by the natives. The gum exuding from the bark of certain species of mesquite is similar to gum ar' a bic.

4. **The agave**, or American aloe, of which the common century plant is a species, is valuable for its juice, from which a fermented* liquor, called pulque (*pōōl' kō*), is made. By distilling* the pulque, a strong, spirituous liquor, known as mezquel (*mez ku' l*), is produced. Both are much used in Mexico. The root of the agave is composed, mainly, of starch, which, when heated for several days, is converted into sugar,—the whole forming a mass of delicious, sugary pulp. The fibers of a similar variety yield sisal (*se s' il*) hemp.

5. There are about forty species of **cactus** growing in the arid regions of Mexico. Certain species are the home of small bugs, or insects, whose bodies, when dried, constitute the *cōch' i nēal* of commerce. Carmine, a valuable dye, is prepared from cochineal.

6. **The cacao** (*ka kō' o*) **tree** produces a bean from which cocoa and chocolate are prepared.

7. **Vanilla**, the seed, or bean, of a climbing plant, is valuable as a flavor.

8. A hideous **lizard**, called the Gila (*hē' lā*) monster, is found in the rivers near the coasts. The taran' tula is an enormous spider whose bite is poisonous. The centipedes* of Mexico sometimes attain a length of ten or twelve inches.

9. **The gold and silver mines** were worked by the Aztecs and Toltecs, many years before the conquest of Mexico by the Spaniards.

10. **The Creoles and native Spaniards** live and dress in much the same manner as the people of the United States. Among the lower classes, the chief articles of food are frijoles, cooked with chile colorado (*chē' lā cōl o rā' dō*), or red pepper, and tortillas (*tor tel' yāh*). The latter are made of meal, or bran flour, rolled, or pressed, into thin, wafer-like sheets, and then baked.

11. **Mexican houses** are nearly all constructed of adobe (*ā dō' bā*), or mud, molded into large bricks, and dried in the sun. The roofs are flat, thatched with coarse grass, and then covered with mud. The floors are commonly of hardened earth, or cement. Such dwellings, while not remarkable for their beauty, are more comfortable than if built, either of brick or wood. The houses of the better classes are frequently built of stone, the interior being richly frescoed* and ornamented. But few houses are more than one story high.

12. **Historical Notes.**—At the time of its discovery by the Spaniards, Mexico was the home of an intelligent and civilized people, known as the Az'tecs.

13. Early in the 16th century, *Cor' tez*, a Spanish adventurer, invaded the country, seized the native king, Montezuma (*mon tē zōō' mā*), and, after a short, but fierce conflict, made Mexico a dependency of Spain.

14. *For three hundred years*, Spanish viceroys, or governors, oppressed and plundered the country, with the utmost barbarity.

15. In 1821, incited by *Hidalgo* (*e dā' go*), a priest, the people threw off the Spanish yoke. Mexico, soon after, became a republic. Ever since, however, the country has been distracted by wars and revolutions, brought about by the schemes of rival military leaders.

16. In 1846, war broke out between Mexico and the United States, because of a dispute about Texas.

17. In 1861, *Maximilian*, supported by the French government, invaded Mexico, and proclaimed himself emperor. His conquest* was short-lived, for he and several of his followers were executed.

* *fā' d' er al*, composed of states, or districts. *fer mēnt' ed*, changed by heat, or chemical action.

vēn' o mōūs, poisonous, noxious.

fis' sūre, cleft, narrow chasm.

e jēt' ed, thrown out.

fōd' der, food for cattle, hay, straw.

pack-trains, numbers of animals carrying baggage.

dis tīll' ing, rectifying, purifying.

gēn' tī pede (lit., a hundred feet), an insect with a great number of feet.

fres' coed, painted on walls.

cōn' quest, overthrow, subjugation.

16. **Central America** forms the most southern part of North America. It comprises five republics, and the British colony of Balize (bə'leɪz).¹ It is situated in the Torrid Zone.

17. **The surface** resembles that of Mexico, being a high plateau situated between low coasts. The climate, however, is hotter and more moist, and its vegetation is, therefore, more luxuriant.

18. It contains several **volcanoes**, two of which, Fuego and Agua,² were recently in a state of eruption. Destructive earthquakes are of frequent occurrence. Lake Nicaragua (nē kă rā'gwā) is the largest lake.

19. **The principal products** are coffee, dye-woods, and sugar. Gold, silver, and coal are found in the highlands.

20. **The inhabitants** are, chiefly, meztizos and Indians. The white people are mainly of Spanish descent.* There are many European merchants* and planters* in Balize and Costa Rica (kōs'tā rē'kā). The language of the country is Spanish.

21. **Guatemala** (gə tē mǎ'la), the largest city of Central America, is the chief commercial port.

22. **San Salvador** (səl vā dōr') and **Le'on** are also cities of commercial importance.

23. **The West Indies** comprise two chains of islands, extending south-east from the coast of North America.

24. **The Bahama** (bə hā'mā) **Islands**, about 600 in number, are low, coral formations. Their climate is warm and healthful.

25. **The sponge fisheries** constitute the chief industry.³

26. **Oranges, lemons, and pine-apples** are the principal fruits. **Salt** is obtained from the lagoons* of Turk's Island, by evaporation.

27. **Nassau**, the capital and commercial port, is situated on Providence Island.

28. **The Greater Antilles** (än tīl'leɪz) comprise the islands of Cuba, Hayti (hā'tī), Jamaica, and Porto Rico. Their surface is mountainous; their climate and productions are those of tropical regions.⁴ The population is made up of Spaniards, Creoles, and Negroes.

29. **Cuba** exports sugar, molasses, coffee, fruits, tobacco, and cigars. Its forests contain ebony, mahogany, and rosewood.

30. **Havana**, the capital, is the center of a vast commerce. It is an important sugar market.

31. **Ma'tan'zas** also is an important city in Cuba.

32. **The Island of Hayti** comprises two independent republics, Hayti and Santo Domingo (sän'to dō mēn'gō). The people and their rulers are Negroes.

33. **Port au Prince** is the capital of Hayti; and **Santo Domingo**, of Santo Domingo.

34. **Jamaica** yields allspice, in addition to the products which are similar to those of the other islands. Rum is the principal export.⁵ Turtle-fishing⁶ is important.

35. **Kingston** is the capital.

36. **Porto Rico** contains many large and fertile plains.

37. **The Lesser Antilles** extend from Porto Rico to the mouth of the Orinoco River.

38. **St. Thomas**, a free port, has an excellent harbor.

39. **Trinidad**, the largest of the group, is famous for its mud volcanoes and its lake of pitch.⁷

40. **The Bermudas** are noted health resorts.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about one or more of these countries and islands, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on these countries and islands, as shown on page 32.

1. THE REPUBLICS OF CENTRAL AMERICA.

Name.	Capital.	Exports.
Nicaragua.....	Managua (mä nū'gwā)	Coffee, India rubber.
Honduras.....	Tegucigalpa.....	Coffee, hides, mahogany, India rubber.
Guatemala.....	Guatemala.....	Coffee, indigo.
Costa Rica.....	San Jose.....	Coffee, fruits, sugar.
San Salvador.....	{ San Salvador { founded, 1528) }.....	Indigo, sugar, balsam.
Balize (colony)....	Balize.....	Coffee, dye-woods, etc.

2. **Fuego** (fwē'go), fire, and **agua** (ä'gwā), water. In 1541, a torrent of water, ejected from Agua, destroyed the city of Guatemala. The present city of Guatemala, sometimes called New Guatemala, has been built near the site of the old city.

3. **The sponge** of commerce is the skeleton of an animal that resembles a plant, growing from the bottom of the sea. In shallow water, the sponges are detached by means of long-handled shears. In deep water, trained divers are employed. The sponges are first exposed to the hot sun, or buried in sand until the fleshy substance has decomposed. They are then washed, bleached, assorted, and shipped to various parts of the world.

4. **The West Indies** are situated in the region of the cyclones of the Atlantic Ocean, and are, therefore, frequently visited by most destructive hurricanes.

5. **Rum** is made by distilling fermented molasses.

6. **The turtle** is one of the necessities of life among the negro population. Its flesh is used for food, its oil is a substitute for butter, and the shell is wrought into ornamental and useful articles.

7. **The pitch**, in the middle of the lake, is constantly boiling.

8. **Historical Notes.**—San Salvador Island was discovered by Columbus on his first voyage to the New World. The Bahama Islands, Jamaica, and Trinidad belong to Great Britain; Cuba and Porto Rico, to Spain; Guadeloupe and Martinique (mār'ā nēk'), to France; and St. Thomas, etc., to Denmark. (See p. 105, § 12.)

9. **The Cubans** have made several unsuccessful attempts to free themselves from the Spanish government. They are permitted to send a representative to the Spanish cortes (kōr'tes), or parliament. Since 1880, arrangements for the liberation of the slaves have been gradually carried out. The remains of Columbus are buried in one of the cathedrals of Havana.

10. **Hayti** was formerly a French possession. Prior to the French Revolution, most of the Negroes were slaves. In 1793, they revolted and obtained their freedom. At this time, the English attempted to seize the island, but Toussaint l'Ouverture, a brave Negro, hastily raised an army, and repelled the invaders. L'Ouverture was appointed governor, and proved to be a statesman of extraordinary ability. Napoleon Bonaparte treacherously attempted to restore slavery; and, seizing l'Ouverture, conveyed him to France, where he died. The attempt was unsuccessful, for the Haytians revolted, and, in 1804, gained their independence.

11. **Santo Domingo** became a republic in 1844.

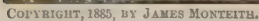
12. The region included in Central America was discovered by Columbus, in 1502. It was made a Spanish possession in 1525, and so remained for about 300 years. Several times, the republics were united as a confederation, but the union was not lasting. The last attempt was made in 1885, by General Barrios, the president of Guatemala. The attempt was resisted by the other republics, and the civil war which followed, ended in the defeat and death of Barrios.

* *de sçent'*, lineage, birth.

plānt'ers, agriculturists, generally on a large scale.

mēr'chants, traders, traffickers.

la gōon', a marsh, or shallow lake, especially one into which sea-water flows.



SOUTH AMERICA.

GENERAL QUESTIONS.

Location.—In what part of the Western Hemisphere is South America? In what direction is it from North America? What isthmus joins South America to North America? What strait south of the continent?

Latitude and Longitude.—What great circle crosses the northern part of South America? What is reckoned from it? What tropic crosses South America? In what two zones is South America? What is the dividing line between the Northern and the Southern Hemisphere? Is the greater part of South America north, or south, of the Equator? What season of the year is it now in that part? What is the length of the longest day at the Equator?—at the parallel of 50° south latitude?

What parallel of latitude crosses the northern part of South America?—the southern part? How many degrees between these parallels? What countries and islands in the Eastern Hemisphere are between the same parallels? What meridian passes through the western part of South America? What part of North America is crossed by that meridian?

Outline.—What oceans wash the coasts of South America? What sea north? Into what ocean does it open? What two gulfs open into that sea? What lake is connected with the Gulf of Venezuela? Where is the Gulf of Paria (*pā' re ā*)? What gulf indents the south-eastern coast of South America?—what bay? What gulf indents the north-western coast?—what bay? Where is the Gulf of Penas (*pēn' yas*)?

Islands.—What islands north of South America? Which is at the entrance to the Gulf of Paria? What island at the mouth of the Amazon River? Where are the Falkland Islands? What group of islands forms the southern part of South America? What strait separates this group from the main-land? Which is the largest of this group? *Ans. East Tierra del Fuego, or King Charles South Land.* Mention other islands in this group. What archipelago west of Chili? Where is the Island of Juan Fernandez (*hō ōn' fēr nān' dēth*)? Where is the Cho'nos Archipelago?—Wellington Island?—Chiloe (*chā lō ō*)?—where are the Chincha (*cheen' chā*) Islands?—Lo'bos Islands?

Capes.—Which is the northern cape of South America?—the eastern?—the western? What cape is north of that cape? What cape projects from the south-eastern part of Tierra del Fuego? Where is Cape Horn?—Cape Frio (*fē' o*)?

Mountains.—What is the general direction of the mountains in the northern part of South America?—eastern part?—western? Of what mountains in North America are the Andes a continuation? What three mountain ranges in the northern part of South America? What mountains in the eastern part of Brazil?—in the western part? What high peaks on the eastern boundary of Chili? Mention three volcanoes in the north-western part of South America. Which is the highest? (*See profile.*) What volcano in the southern part of Peru?

Lakes and Rivers.—What large lake in the northern part of South America?—in the western part? What lake in the south-eastern part? How far is it above the level of the sea? (*See profile.*) Mention the principal river of South America. In what country are its head waters? What small lakes are supposed to form its head waters? What two rivers drain those lakes? What is the general course of the Amazon? Where is its mouth? About how wide is its mouth? What country comprises most of the Valley of the Amazon? Mention its longest tributaries. Where is the Orinoco River? By what is the Orinoco connected with the Amazon? What short river forms part of the boundary of the Island of Marajo (*mā rā zhō'*)? Mention its principal tributary. What wide, but short, river in the south-eastern part of South America? By what two rivers is it formed? Mention a large tributary of the Parana (*pā rā nā*). Where is the San Francisco River? Why are there no large rivers west of the Andes? To what tributary, or place, is the Amazon navigable?—the Orinoco?—the Madeira? Toward what points of the compass would you sail in ascending the Amazon from its mouth to its source?—the La Plata and Paraguay?—the Tocantins?

—the San Francisco?—the Magdalena?—the Orinoco? Where is the Chagres (*chā' grēs*) River? (*See map of the Isthmus of Panama.*) In what direction, and into what, does it flow? What is being done to enable ships to cross the Isthmus? Near what two rivers will that canal pass? What waters will it connect, when it is completed? How does it pass the mountains?

Countries.—Which is the largest country of South America?—the smallest? What countries border on the Caribbean Sea?—on the Atlantic Ocean?—on the Pacific Ocean? What two countries have no sea-coast? What country is entirely west of the Andes Mountains? To what two countries does Tierra del Fuego belong? Which country extends farthest south? What is its most southern point? What two countries extend farthest north? What country belongs to three European governments? Mention those governments.

Climate.—Where is the Thermal Equator, or line of greatest heat? What is the mean temperature of the southern part of Brazil? What country is in the rainless region? In what part of South America would you find snow at no time during the year?—at all times?—only in winter? In what months of the year is it winter, in the southern part of South America?

Products.—In what parts of South America are cotton and sugar produced?—coffee and bananas? Where are cattle extensively raised? In what country is gold found?—diamonds?—copper?—quicksilver? What medicinal bark is obtained in South America?

Cities.—What is the capital of the largest country in South America?—of the smallest?—of the narrowest?—of the most north-western?—of the largest republic in South America?—of the country which is drained by the Orinoco River?—of the British Colony?—of the Dutch Colony?—of the French Colony?—of Peru?—of Bolivia? What capital is very near the Equator?

Commercial Geography.—Mention the sea-ports on the Caribbean Sea. In what direction does the ocean current flow near the north-eastern coast of South America?—the eastern?—the western?—the north-western?—the southern? Which are warm currents?—cold currents?

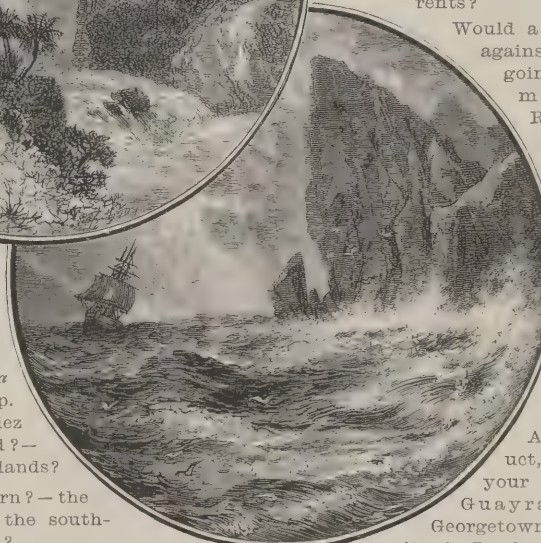
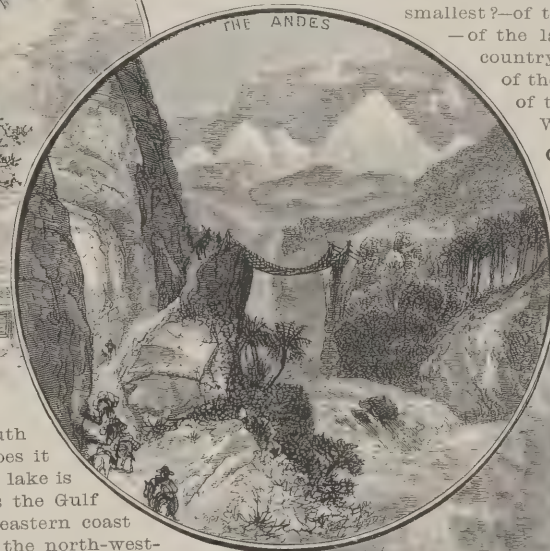
Would a ship sail with, or against, the current, in going from the Isthmus to Cape St. Roque?—from Cape St. Roque to the Strait of Magellan?—in sailing around Cape Horn from the Atlantic Ocean?—along the coast of Peru?—from Peru to the Isthmus?

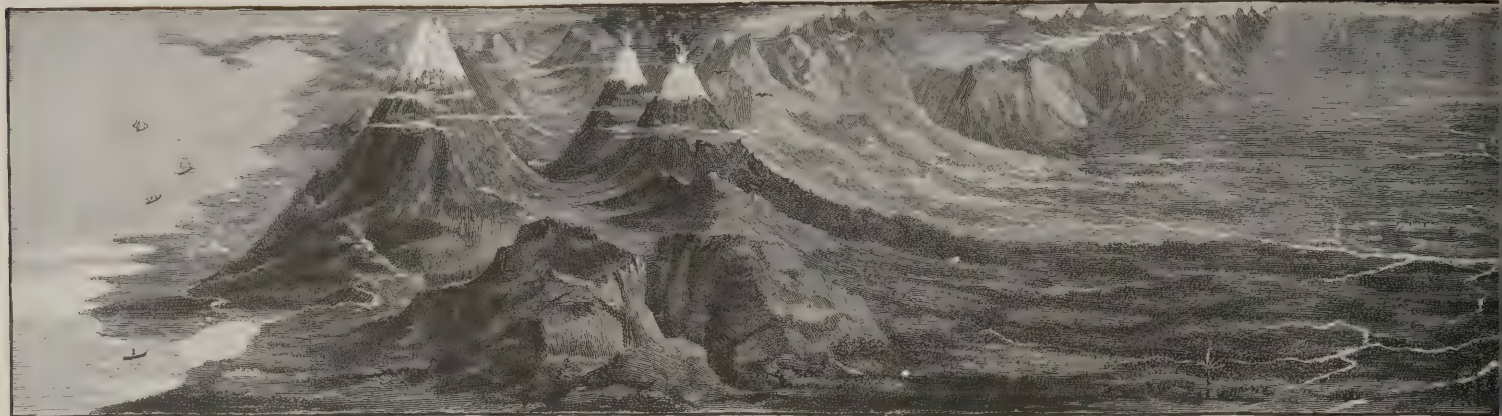
If you should make a voyage around South America, what product, or products, could your ship receive at La Guayra (*lā gwā' rā*)?—at Georgetown? Of what capital city is La Guayra the sea-port?

STRAIT OF MAGELLAN. At what port could your ship obtain pepper?—drugs?—coffee?—sugar?—hides?—tallow?—horns? Why? Of what uses are these articles? Where would you go for a cargo of copper?—niter?—guano? Mention some of their uses.

What part of South America is as far south of the Equator as your state is north of it? How do the seasons there compare with yours?

Map Drawing.—To draw a map of South America, construct an oblong diagram eight measures from east to west, by twelve measures from north to south. On the sides mark the four principal capes:—Cape, or Point, Gallinas, one and three fourths measures, and Cape Horn, three measures, from the left side; Cape Blanco, three and one fourth, and Cape St. Roque, three and one half measures from the upper side. Between them draw the outline of South America, then mark the mountains, rivers, countries, cities, etc. Each measure represents the length of Kansas—400 miles.





PACIFIC COAST.

ANDES MOUNTAINS,—MT. CHIMBORAZO,—VOLCANO COTOPAXI,—VOLCANO ANTISANA.

LONG, EASTERN SLOPE,—JAPURA RIVER.

SELVAS OF AMAZON R.

SOUTH AMERICA.

1. **Position.**—South America, the southern part of the Western Continent, is situated chiefly in the Torrid Zone. Its southern extremity is in the South Temperate Zone.

2. **Size and Outline.**—Its area is nearly twice that of the United States. In shape, it is a triangle, which tapers* to a point toward the south. The coast line has but few indentations.

3. **Surface.**—Like North America, it has mountain ranges in the west and east, and a vast plain in the center.

4. *The Andean Plateau*, the main axis of the continent, extends along the entire western coast. It supports parallel ranges, which constitute the Andean System. Its high peaks are always covered with snow. The highest measured peak is Mount Aconcagua (ä kōn kă'gwä), which is about 24,000 feet in height.¹ The most celebrated volcano is Cotopaxi (kō tō päks'ë).²

5. *The Brazilian highlands* are traversed by low, mountain ranges.

6. *The plateau* of Guiana is covered with dense forests.

7. *The plains* of South America cover about one half its area. The llanos (lyä'nos) of the Orinoco are treeless plains. During the rainy season, they become a vast inland sea. With the disappearance of the water, comes a profusion of tropical vegetation, which quickly withers under the intense heat of the sun.

8. *The selvas* of the Amazon are in the region of

heavy and almost daily showers. They are covered with forests, vines, and thick undergrowths.

9. *The pampas* are covered with coarse grass, which makes them vast herding-places for cattle, horses, and sheep. They are treeless, and, in some places, barren.

10. **Lakes.**—The largest lakes in South America are Maracaybo (mä rä kī'bō) and Titicaca (tīt e kă'kă). The latter is 12,000 feet above the sea-level.

11. **Rivers.**—On account of the nearness of the Andes to the Pacific, there are no large rivers west of those mountains. The Amazon, Orinoco, and La Plata, with their tributaries, drain nearly the whole eastern slope.

12. *The Amazon* is the largest, and one of the longest rivers of the world. Its course is nearly along the Equator. Its highest source is within 70 miles of the Pacific Ocean. At its mouth, the river is nearly 200 miles wide. Its current and the freshness of its water are perceptible* 200 miles out at sea.³

13. *The basins of the Amazon and Orinoco* are not separated by any well-defined water-shed. The Cassiquiare (kă sē kē ä'rē) River, at the summit of the divide, sends part of its waters into the Rio Negro (rē'ō nă'grō), a tributary of the Amazon, and part into the Orinoco.

14. *The La Plata River* and its tributaries flow from the Torrid Zone through the South Temperate Zone. Its course, therefore, is through regions differing from one another in climate and productions. The water-shed, which separates its basin from that of the Amazon, is low, and in the rainy season, covered with water.

1. In Bolivia and Peru these ranges widen out, forming the Bolivian Plateau. Cross-spurs of mountains connect the parallel ranges, inclosing elevated parks similar to those of Colorado. The **Andes** are, in many places, very steep, with sharp cliffs and precipices, narrow passes, and deep chasms. The scenery is grand and beautiful. Here, travel and trade are conducted, chiefly, on the backs of horses, mules, and llamas (lä'mäs), and, sometimes, in chairs strapped to the backs of Indians. Chasms are crossed on suspension-bridges made of rope, or of wire. Among the peaks which are more than 20,000 feet above the level of the sea, are Sahama (sä hä'mä), Chimborazo (chīm bō rä'zō), and Sorata (sō rä'tä); and volcanoes Gualateiri (guä lä'tä rē'rē) and Arequipa (ä rä kē'pä). Over 18,000 feet, in height, are volcanoes Atacama (ä tä kă'mä), Antisana (än tē sä'nä), and Cotopaxi. The height of the snow-line, above which the mountains are covered with perpetual snow, is, in the tropical regions, 15,000 to 18,000 feet; in Central Chili, 8,000 feet; and in Southern Chili, 3,000 feet.

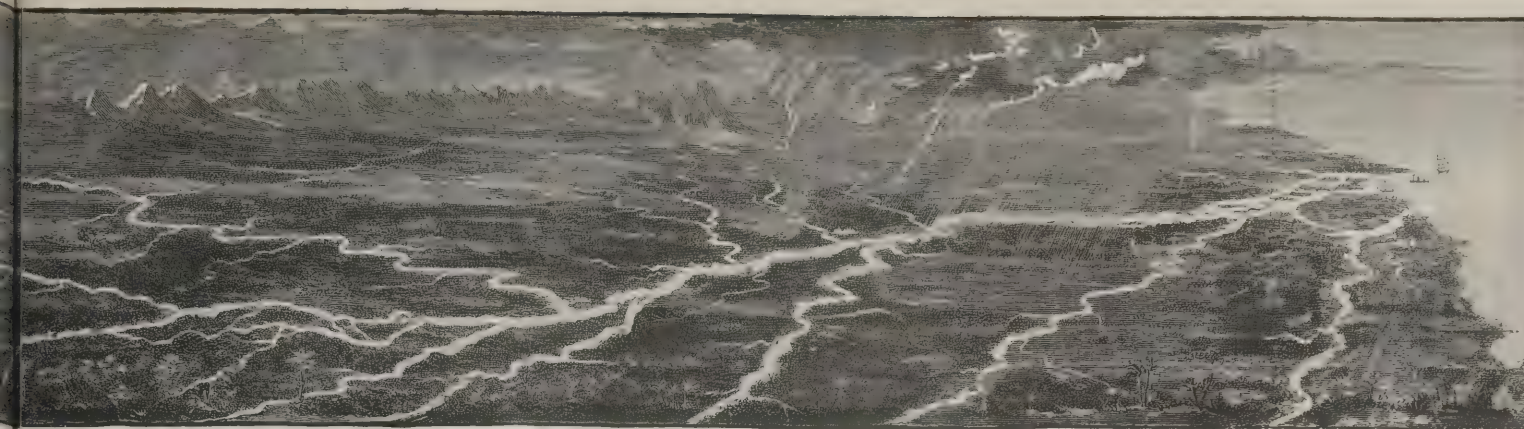
2. The volcanoes of the Andes are among the most interesting physical features of the continent. There are several hundred extinct craters, and a large

number that show constant signs of activity. The region of volcanic activity is, also, subject to violent earthquakes. In 1868, a series of earthquakes occurred, during which the cities of Tacna (tä'kä nă), Iquique (ä kē'kă), Arequipa, and Arica (ä rē'kă) were destroyed.

3. The source of the Amazon has not been determined. Some geographers consider the Apurimac (ä pō'rē māk'), a tributary of the Ucayale (ō kă ä'lä), the chief source; others, a small lake near the town of Pasco. The Amazon River is not confined to a single channel; in its lower course, it flows through an intricate net-work of minor channels. At all seasons of the year, canoe portage is possible between the Amazon and the Orinoco.

4. Quito, Cuzco, Potosi, Bogota, and Pasco have elevations varying from 8,500 to 14,000 feet. In a day's ride, among the tropical Andes, one may find all gradations of climate, with their characteristic vegetable products.

* tä'per, to become smaller gradually toward one end.
per päp'ä ble, discernible, capable of being perceived.



—NEGRO RIVER. PARIME MOUNTAINS,—MADEIRA RIVER. TAPAJOS RIVER. XINGU RIVER. TOCANTINS RIVER,—MARAJÓ ISLAND.—ATLANTIC COAST.

15. **Soil.**—The soil is fertile in nearly all parts of the continent. The southern part, however, is barren, rocky, and desolate.

16. **Climate.**—The climate along the sea-coast is generally warm, except in the south. In the interior of the lowland plains, the heat is almost intolerable.

17. *On the plateaus and western slope of the continent, the climate is noted for its mildness. Many of the cities within the Torrid Zone are situated at such great heights that their climate is that of perpetual spring.*⁴

18. *In the Torrid Zone, the prevailing winds are from the east. The moisture they bring falls between the Atlantic Ocean and the Andes Mountains. The Andes are here so high that they intercept* all the moisture, causing long, narrow strips of desert between them and the Pacific.*

19. *In the South Temperate Zone, these conditions are reversed.* The rain-bearing winds being from the west, the rainless region is east of the Andes.*

20. **Vegetation.**—The selvas of the Amazon produce a wonderful variety of ornamental woods, such as mahogany, rosewood, vegetable-ivory, and tortoise-shell wood. The India rubber, cacao, and cocoa-palm trees are abundant.⁵

21. *The lowlands abound in wild grasses, and on the mountain slopes, are found the cinchona-tree (sín kō'nà)⁶ and many kinds of medicinal plants.*

5. *The India rubber tree, when tapped, gives out a milky juice, which is received in a clay cup, or jar, placed at the incision in the trunk. The juice is dried and colored black by exposure to the heat and smoke of a fire. The ivory-nut contains a fluid which hardens into a substance resembling ivory. From what animals is ivory obtained? The cacao-tree bears beans, or seeds, from which chocolate and cocoa are made. Chô'olate is a paste composed of the roasted kernel, ground and mixed with sugar and cinnamon, or vanilla. The cocoa-palm bears cocoa-nuts.*

6. *Cinchona is a kind of tree which grows exclusively on the Andes. It was so named from the wife of Count Cinchon, Viceroy of Peru, in the seventeenth century, who, by its use, was cured of intermittent fever. From its bark, called Peruvian bark, qu'inine is made.*

7. *Manioc (mā'nā) flour is prepared from the root of the cās'sa vā plant. The dried pulp,* when ground, is an excellent substitute for flour. The milky fluid, when left to stand, deposits a fine starch, which, when washed and dried, is the tapioca (tāp i'ca) of commerce.*

8. *The boa-constrictor often attains a length of 30 feet. The South American monkeys are small; and, unlike the monkeys of the Old World, have prehensile**

22. *The chief cultivated plants are coffee, sugar-cane, cotton, tobacco, indigo, manioc,⁷ and spices.*

23. **Animals.**—In the Torrid Zone, are found the jaguar (jäg ū ār'), the largest carnivorous* animal of the continent, several species of monkeys, the boa-constrictor, tapir, enormous bats, and reptiles.⁸

24. *Farther south, the peccary, ant-eater, and armadillo are numerous. In the mountainous regions, are the lla'ma and vicuña (vē kōon'yā).⁸*

25. *The condor, the largest bird of flight, lives in the Andes Mountains. Parrots and other birds of beautiful plumage abound in the tropical forests.*

26. **Minerals.**—South America is rich in minerals. A large part of the silver now in use in the world was obtained from the Andes Mountains. Gold is mined in Colombia and Brazil. Peru is the chief source of niter.*

27. **People.**—Indians are the native inhabitants of South America. They were preceded by a civilized people, who disappeared soon after the conquest of the country by the Spaniards.

28. *Most of the civilized inhabitants are of mixed blood, being descendants of the Spaniards and native Indians. They speak the Spanish language. The people of Brazil are, chiefly, of Portuguese descent, and speak the Portuguese language. There are, also, many Negroes.*

29. **Industries.**—The chief industries of the inhabitants of South America are herding,* agriculture, and mining.

tails. The peccary (pēk'ka rj) is a species of wild hog, very savage in its nature. The ant-eater is noted for its long, worm-like tongue, which is covered with a viscous* fluid. This fluid attracts the ants, and they cluster upon the tongue of the animal, which quietly makes a meal of the unwary* insects. The arma dī'lo is so named from the horny scales which constitute an effectual armor for its body. When attacked, it rolls itself into a ball. It burrows in the earth, where it remains during the day-time. The vicuña and alpaca (al pāk'a) are valuable for their fine, woolly hair, used in making delicate fabrics. They resemble the guanaco (guā nā'kō) and the llama. The llama, a species of sheep, resembles a camel. It is used as a beast of burden. Reptiles (rep'fils) are animals which creep, such as snakes, lizards, etc. The tapir (tā'pīr) resembles a pig, but is much larger, and has a short proboscis. The tapir of South America is all black, while that of Asia is partly white, or light colored.

* *in ter cēpt'*, to stop on its passage.

re versed', changed to the contrary.

car nīv' o roīs, feeding on flesh.

pūlp, soft animal, or vegetable, matter.

nī' ter, saltpeter.

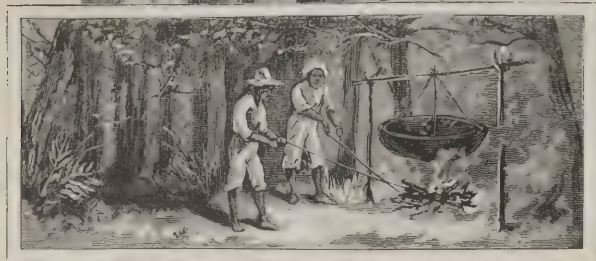
vis' cōis, sticky.

herd' ing, the care of cattle, horses, etc.

pre hēn' sile, adapted to seize, or grasp.

un wā' ry, not cautious.

30. The Empire of Brazil, the largest country of South America, is the only monarchy in the New World. It is almost wholly in the Torrid Zone.⁹



INDIA RUBBER-TREES. (See page 95, note 5.)

31. It comprises the eastern plateau and the basins of the Amazon and the La Plata. The northern and western parts are low, swampy, and, during the rainy season, completely inundated.

32. Near the coast, the valleys are rich and well cultivated.

33. The greater part of the country has a tropical climate. The southern part has a temperate climate.

34. Coffee, cotton, sugar, tobacco, rice, grain, tropical fruits, nuts, and spices are raised in abundance.

35. The leading industries are cattle-raising and agriculture.

36. The natives live in the interior. The ruling people are the Portuguese, or their descendants.

37. Rio Janeiro, the capital, is the largest city in South America. Its chief exports are coffee and India rubber.¹⁰

38. Bahia (bā ē'ā) is the center of the di' a mond trade.¹¹

39. Recife (rā sē'fā) exports coffee, sugar, and dye-woods.

40. The Andes Republics, comprising the United States of Colombia,¹² Ec ua dor', Peru, Bolivia, and Chili (chil'e), occupy the mountainous region along the coast of the Pacific Ocean.

41. The coast is steep, affording very few harbors.

42. The surface is rugged. The high plateaus are sterile, but the mountain sides and the valleys afford pasturage, and yield grain and other products.

43. This region is subject to earthquakes, and it contains some of the most celebrated volcanoes in the world.

44. The governments are republican in form, modeled after our own; but they are subject to frequent revolutions.

45. Bogota (bō gō tā'), the capital of the United States of Colombia, although near the Equator, has a temperate climate all the year.¹³

46. Panama (pān a mā'), on the isthmus, is the largest and most important city. It is connected by railroad with Colon (kō lōn'), or As' pin wall.¹⁴ Its climate is tropical and unhealthy.

47. Quito (kē'tō), the capital of Ecuador, is situated on a very high plateau, surrounded by volcanoes.

48. Guayaquil (gwī ā kēl') is the chief commercial city.

49. Lima (lē mā'), a few miles from the coast, is the capital of Peru. Its port is Callao (cāl lā'ō).

50. Arequipa (ā rā kē'pā) was several times destroyed by earthquakes.

51. La Paz (lā pāth) is the capital and largest city of Bolivia.

9. Brazil is divided into provinces, each of which is governed by a president, appointed by the emperor. The laws are made by the general assembly, consisting of senators and deputies, elected by the people. Slavery has been abolished in some of the provinces; and in the others, gradual emancipation has been provided for, by law. The area of Brazil is about as great as that of the United States, while its population is less than one fifth.

10. Rio Janeiro (rē'ō jō nē'rō) is situated on a bay, celebrated for its beauty.

11. Bahia has one of the finest harbors of South America.

12. The population of the United States of Colombia (kō lōm' dā ā), about equal to that of Illinois, is about one half Spaniards, one third Negroes, and one sixth Indians.

13. Bogota, although within four and a half degrees of the Equator, has a climate of perpetual spring, due to its altitude of nearly 9,000 feet. Its wet seasons are our spring and autumn; its dry seasons, our summer and winter. It is warmest in February, and coldest in December. Grain is sown twice a year. Most of the houses are built but one story high, owing to the frequency of earthquakes. There are, however, many large, splendid buildings.

14. A ship-canal is now being built across the Isthmus of Panama.



THE PLAINS IN THE WET SEASON.



THE PLAINS IN THE DRY SEASON.

52. **Chili** is the most powerful and enterprising of the Spanish-American republics.

53. *It is situated* on the western slope of the Andes, and extends from the Bay of Arica to Cape Horn.¹⁵

54. *Along the coast* are numerous islands, which are rich in guano* and niter.

55. *Its climate* is temperate and moist.

56. *The people* are, chiefly, of Spanish origin. They are active, industrious, and intelligent.¹⁶

57. **Santiago** (săn tē ā'gō) is the capital. **Valparaiso** (vāl pā rī'sō) is the largest commercial city on the west coast of South America.¹⁷

58. **The Argentine** (ār'gēn tīn) Republic is a broad and level country, comprising most of the pampas.

59. *The people*, are engaged in herding, and in preparing dried beef, hides, tallow, and horns for export.

15. **Chili** is the same in extent from north to south as the United States from east to west,—about 2,600 miles.

16. **The people of Chili** are, chiefly, a mixture of Spanish and Indians. About one fifth are of pure Spanish blood. Schools are numerous. Next to the United States, Chili is the most prosperous nation on the Pacific Coast of the Western Continent. It is freer from revolution than any other republic in South America.

17. **Santiago** is a beautiful city, situated on a fertile plain, 2,000 feet above the sea-level, and 120 miles inland. It is connected with Valparaiso by railroad.

18. **Other important Cities.**—IN BRAZIL,—**Pā rā'** is a great India rubber port.

19. IN UNITED STATES OF COLOMBIA,—**Popayan** (pō pī ān'), situated 6,000 feet above the sea-level, was the first city built in this region by Europeans. **Cār tā gē'na**, a sea-port, is low, hot, and unhealthy.

20. IN PERU,—**Cuzco** (kōōs'kō), the ancient residence of the Inca sovereigns, is situated on a plateau, at an elevation of about 11,500 feet.

21. IN BOLIVIA,—**Cō cha bām' bā** is over 8,300 feet above the sea-level. Nearly all its houses are but one story high. **Sucre** (soo'kra) was once the capital of Bolivia. **Potosi** (pō tō se') is more than 12,000 feet above the sea-level.

22. IN CHILI,—**Concepcion** was several times destroyed by earthquakes. It is now a well-built city, and has an active trade, exporting grain, hides, tallow, and beef.

23. IN ARGENTINE REPUBLIC,—**Cōr' āō vā** is situated in a beautiful valley, and carries on a large trade in hides and wool. **Mendoza** (men do'tha) is less than 3,000

60. **Buenos Ayres** (bō'nus ā'rīz), the capital and largest city, has an extensive commerce.

61. **Paraguay** (pā rā gwī') and **Uruguay** (ōō rōō gwī') resemble the Argentine Republic, in surface, products, and the occupations of the people.

62. **Mon te vid'e o**, the capital of Uruguay, is an important commercial city.

63. **Asuncion** (āsōon the ōn') is the capital of Paraguay.

64. **Venezuela** (vēn e zwē'la) lies almost entirely within the basin of the Orinoco. Its climate is tropical.

65. *The people* are engaged in cattle-raising and agriculture. Hides, meat, tallow, coffee, cocoa (kō'ko), cotton, sugar, and dye-woods are exported.

66. **Caracas** (kā rā'kās) is the capital. It has frequently suffered from earthquakes.

67. **Guiana** (gē ā'nā) embraces three colonies,—British, French, and Dutch. Its products are like those of Venezuela.

68. **Cayenne** (kā yen') is the capital of French Guiana; **Georgetown**, of British Guiana; and **Paramaribo** (pā rā mār'i bō), of Dutch Guiana.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about South America, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on South America, as shown on page 32.

feet above sea-level. It was overthrown by an earthquake, in 1869. Its trade with Chili and Buenos Ayres is important. The elevation of the mountain pass on the road connecting it with Santiago, is nearly 13,000 feet.

24. **Historical Notes.**—*South America* was discovered by Columbus, in 1498, near the mouth of the Orinoco. The early Spanish discoverers found an Indian village near Lake Maracaybo, built over the water on piles. As it reminded them of Venice, they called it Venezuela, which means Little Venice.

25. **Bāl bō' ā**, in 1513, crossed the Isthmus, and was the first white man who saw the Pacific Ocean, from the coast of the Western Continent; but, long before all this, the ancient Peruvians had lived there. They had built strong cities, fine temples, great aqueducts, and splendid roads and bridges, ruins of which still remain. Peru was invaded by the Spaniards, under Pizarro (pē zār'o), who cruelly treated the natives, destroying their cities and plundering their temples.

26. *South America* was thus conquered and settled by Spaniards, except Brazil, which was settled by Portuguese, and Guiana, which was settled by British, Dutch, and French.

27. *About 300 years afterward*, the people of the countries of South America (except Guiana), declared themselves independent of Spain and Portugal.

28. **Simon Bol' i var** was the most distinguished general and patriot of South America. He was called the "Liberator," also the "Washington of South America."

* **guā' no**, a manure; a fertilizer.

COMPARATIVE TIME WHEN NOON AT LONDON.



EUROPE.

GENERAL QUESTIONS.

Location.—In which hemisphere is Europe? In what part? What ocean north?—west? Which exerts the greater influence upon the climate of Europe? How? What natural boundaries has Europe on the east? From what do they separate Europe? In what direction would you travel from Europe, to reach the largest sea in the world? Mention it.

Latitude and Longitude.—What part of Europe is crossed by the parallel of 60° north latitude? How many miles make a degree of longitude on that parallel? What is the length of the longest day there? What part of Europe is crossed by the parallel of 40° north latitude? How many miles make a degree on that parallel? What is the length of the longest day on the parallel of 40° north latitude?

What part of Europe is crossed by the Arctic Circle?—by the meridian of Greenwich? What meridian nearly coincides with the general trend of the Ural Mountains? What meridian is the boundary between the Eastern and the Western Hemisphere? (See page 37.) What island is crossed by this meridian? How many degrees of longitude between the Ural Mountains and the western coast of Ireland?

When it is noon at London, what time is it at St. Petersburg?—at Berlin?—at Queenstown, Ireland? If a steamer should leave Queenstown at six o'clock A. M., and a telegram be sent to it from St. Petersburg at six o'clock, A. M., the same day, how long before the departure of the steamer would the message be received, allowing thirty minutes for transmission? When it is sunrise at the Caspian Sea, what time is it at the capital of Portugal? Mention that capital. What is the difference in time between Berlin and Constantinople?

Outline.—What three arms of the Arctic Ocean indent the northern shore of Europe? What two seas are west of Europe? Where is the Bay of Biscay?—Black Sea?—Caspian Sea? By what are the waters of the Atlantic Ocean and the Mediterranean Sea connected? What three seas are arms of the Mediterranean Sea? What countries have no sea-coast?

What arm of the White Sea indents the northern shore of Russia? What three gulfs are arms of the Baltic Sea? By what are the Baltic and North seas connected? What countries are separated by these waters? What channel and sea between England and Ireland? What channel and strait between England and France? What gulf indents the shore of France?—of Italy?—of Turkey? What countries are separated by the Strait of Otranto?—what waters are connected by it? In what direction is the Archipelago from Greece?

Through what sea and straits must the waters of the Black Sea flow, to reach the Mediterranean Sea? What arm of the Black Sea indents the southern shore of Russia? What strait connects these two seas? How much below the sea-level is the surface of the Caspian Sea? (See sectional diagram at foot of map.)

Islands.—What three islands north of Russia? What islands north-west of Norway? What large island west of Norway, and north-west of Scotland? What islands in the Baltic Sea? Where are the British Isles? Where is the Island of Corsica?—Sardinia?—Sicily?—Malta?—Candia?—Cyprus? What group of islands east of Spain?—west of Greece?

Peninsulas.—What two countries form the Scandinavian Peninsula? *Ans.* Norway and Sweden. What waters

nearly surround this peninsula? What two countries form a peninsula in the south-western part of Europe? What is the peninsula called? *Ans.* The Iberian Peninsula. What two peninsulas in the southern part of Europe? Which peninsula of Europe projects in a northerly direction? What waters almost surround this peninsula? What peninsula in the southern part of Russia? Where is Lapland?

Capes.—Mention the most northern cape of Europe?—the most southern? What two capes project from the north-western part of Spain? What cape projects from the south-western part of Portugal?—from the southern part of Italy?

Mountains.—Which country of northern Europe is the most mountainous? What mountains are in that country? In what general direction do they extend? What mountains between France and Spain? In what direction do they extend? What mountains between Italy and Switzerland? In what direction do they extend?

What mountains in Italy? In what direction do they extend? What mountains north of Turkey? In what direction do they extend? What mountains in the north-western part of Spain?—in the southern part?—in the eastern part of the Austro-Hungarian Monarchy?—on the eastern boundary of Russia?—on its southern boundary? What two high peaks on the southern border? What celebrated volcano in Italy?—in Sicily?—in Iceland? Which is the highest peak of the Alps?

Lakes and Rivers.—What two large lakes in Russia? What two in Sweden? What two rivers flow into the Caspian Sea? What large river flows into the Sea of Azov (*à 200'*)?—into the north-western part of the Black Sea?—into the western side of that sea? What rivers of Europe flow into the Arctic Ocean or its arms? In which country of Europe are they? In what general direction do the rivers of Sweden flow? Why? Mention the principal rivers of Germany. Where do they have their sources? Into what waters do they flow? In what direction do they flow? Why? Which is the largest river in Italy?

What river in France flows into the English Channel?—into the Gulf of Lyons? What two flow into the Bay of Biscay? What river of Spain flows east? Into what does it flow? What three rivers flow west? Into what do they flow? Where is the source of the Danube River? What is its general course? Where are its mouths?

Countries.—Which is the largest country of Europe? What five countries border on Russia? What country between Norway and the German Empire? Where is Turkey?—Greece?—Servia?—Bulgaria?—Eastern Roumelia? What countries form islands, or parts of islands?

Climate.—Which is warmer, Eastern, or Western, Europe? What part of Europe is crossed by the isotherm of 40° Fahr.?—of 50°?—of 70°? Which are the coldest countries?

Products.—Mention some of the useful minerals found in Germany,—in Sweden. Where is the most timber obtained?

How far north do trees grow?—rye and oats? Where is the grain section? How far north is wheat cultivated? What countries are noted for their production of wines?—of silks? Where is cork obtained?—olive oil?

Cities.—Mention the largest city in Europe. Of what country is it the capital? What city is the capital of Norway?—of Sweden?—of Russia? Of what country is Copenhagen the capital? How is it situated? What city is the capital of the German Empire?—of the Austro-Hungarian Monarchy? Of what country is The Hague the capital?—Brussels?—Bern? What city is the capital of France?—of Italy?—Turkey? Of what country is Lisbon the capital?—Athens? What city is the capital of Spain?—of Roumania?—Servia?—Bulgaria? Which is the coldest capital?

Commercial Geography.—Mention the principal sea-ports on the Atlantic Coast. (See red names on small chart.) What sea-ports on the Baltic and the

North Sea? What sea-ports on the Mediterranean Sea?

On what waters would you sail from London to Constantinople? In what direction would you go by railroad from Paris to Rome?

Map Drawing.—Locate North Cape; and, in an easterly direction, at the distance of two and one half measures, locate the mouth of the Kara (*kī'rā*) River; between these points draw the northern boundary of Europe; in a south-westerly direction, four measures from the mouth of the Kara River, locate the mouth of the Ural River, and draw the eastern boundary; thence, in a south-westerly direction, four and a quarter measures, locate Cape Matapan, and draw the south-eastern boundary; thence, to Cape St. Vincent, four and a half measures, draw the southern boundary; and thence six and three fourths measures to North Cape, draw the western boundary.

To draw maps of England, Scotland, and Ireland, construct for each an oblong frame, and proceed as directed on page 37. What is the extent of England from north to south?—from east to west? What is the extent of Scotland from north to south?—from east to west, including its islands? What is the length of Ireland?—its width?



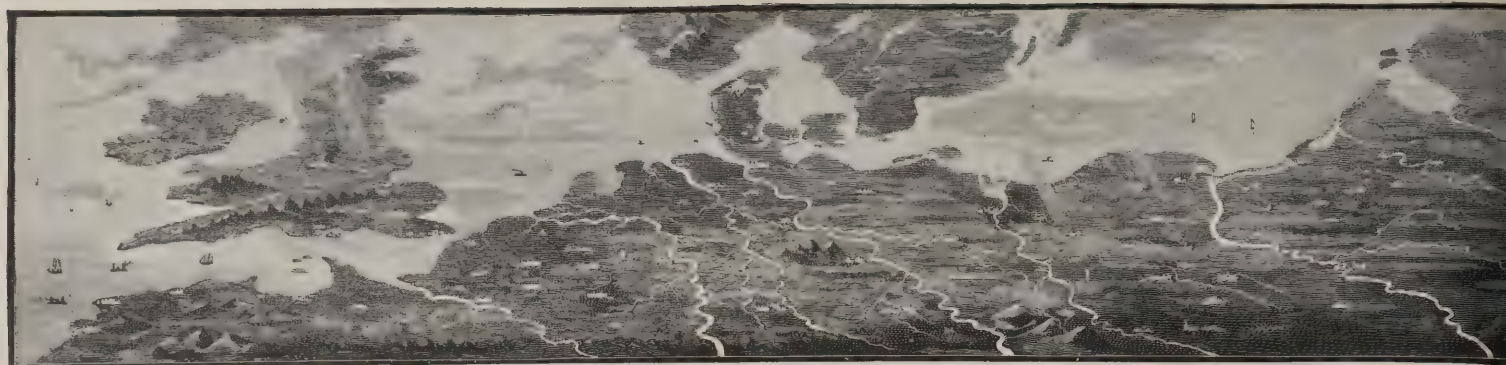
MIDDLE SECTION.—1. Sleat Sound, —2. L. Linnhe, —3. Ben Nevis, —4. Grampian Mts., —5. North Sea, —6. Ben Macdui (Cairngorm Mts.). SOUTHERN SECTION.—7. Arvan, —8. Firth of Clyde, —9. Glasgow, —10. Pentland Hills, —11. Edinburgh, —12. Lammormoor Hills.



1. Cader Idris Mt., —2. Severn R., —3. Central Plain, —4. East Anglian Hills, —5. Snowdon Mt., —6. Cumbrian Mts., —7. Cheviot Hills.



MIDDLE SECTION.—1. Connemara Mts., —2. Galway, —3. Shannon R., —4. Dublin, —5. Donegal Mts. SOUTHERN SECTION.—6. Mac Gillicuddy Reeks, —7. Lakes of Killarney, —8. Blackwater R., —9. Waterford, —10. Wexford, —11. Galty Mts., —12. Wicklow Mts.



ATLANTIC OCEAN. BRITISH ISLES,—ENGLISH CHANNEL,—STRAIT OF DOVER,—NORTH SEA. DENMARK. BALTIC SEA. NORTHERN GERMANY.

EUROPE.

1. **Position.**—Europe is a peninsula, projecting from Asia. It is situated, chiefly, in the North Temperate Zone, and is in the same latitude as the United States and the Dominion of Canada.

2. **Size and Outline.**—Excepting Australia, Europe is the smallest of the grand divisions. It is a little larger than the United States.¹

3. *In the relative extent of coast*, Europe surpasses every other grand division. It is partly to the great number of indentations of the coast, that Europe owes its commercial supremacy.²

4. **Islands.**—The islands of Europe constitute about one twentieth of its area. Of these, the British Isles are the largest and most important.³

5. **Surface.**—The greater part of the continent is low and level. Russia and all the territory bordering on the North and Baltic seas constitute a vast plain, called Low Europe. The basin of the Caspian Sea and much of the Netherlands are below the sea-level.

6. A *high plateau*, extending along the southern part of the continent, is known as High Europe. This plateau is surrounded by the irregular and broken mountain ranges which constitute the Alpine (ăl'pîn) System, the main axis of the continent.

7. *The Alps* are the highest range. The other principal ranges are the Pyr'e nees, Ap'en nines, Balkan (băi kăn'), Car pa'thi an, and Caucasus mountains.

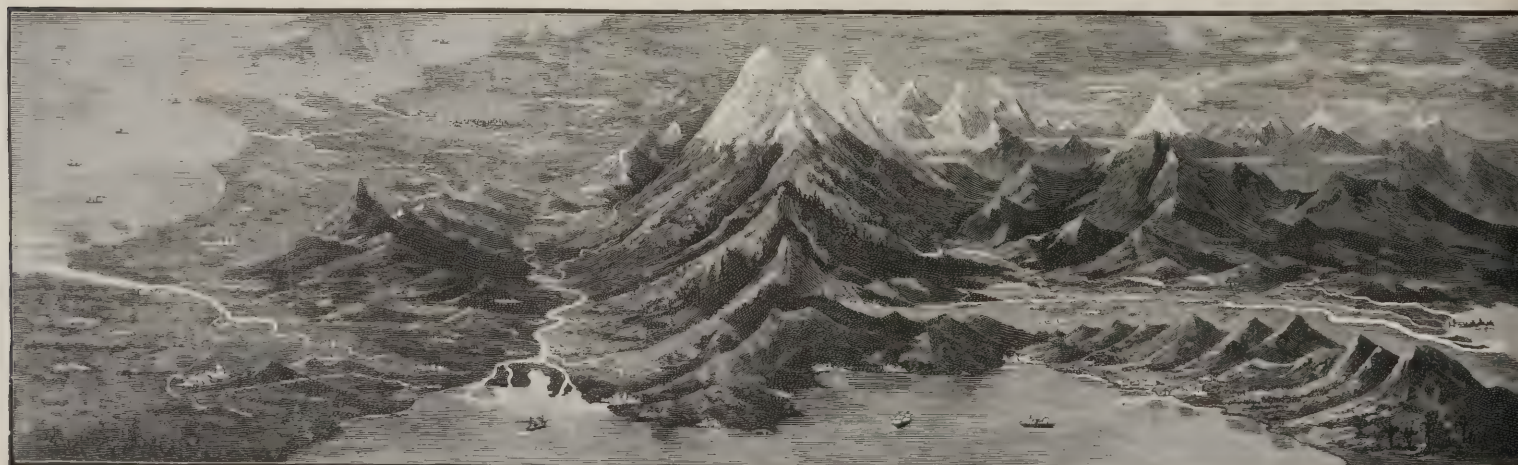
8. *The Scandinavian Mountains* form the north-western border; and the Ural, the north-eastern.

9. *The valleys* of the Danube and the Po are noted for their fertility.

10. **Glaciers.**—The Alps have long been celebrated for the number and extent of their glaciers among which are the sources of the Rhine, Rhone, Po, and several tributaries of the Dan'ube.⁴

11. **Lakes.**—The chief lake region of Europe is in North-western Russia. Lake Ladoga (lăd'ō gă) is the largest lake.

12. *The lakes in Switzerland*, especially Geneva and Constance, are celebrated for their beautiful scenery.



ATLANTIC OCEAN,—FRANCE. THE RHONE AND ITS DELTA. MEDITERRANEAN SEA. ALPS,—MT. BLANC,—SWITZERLAND. PO RIVER AND VALLEY. ITALY,—APENNIN

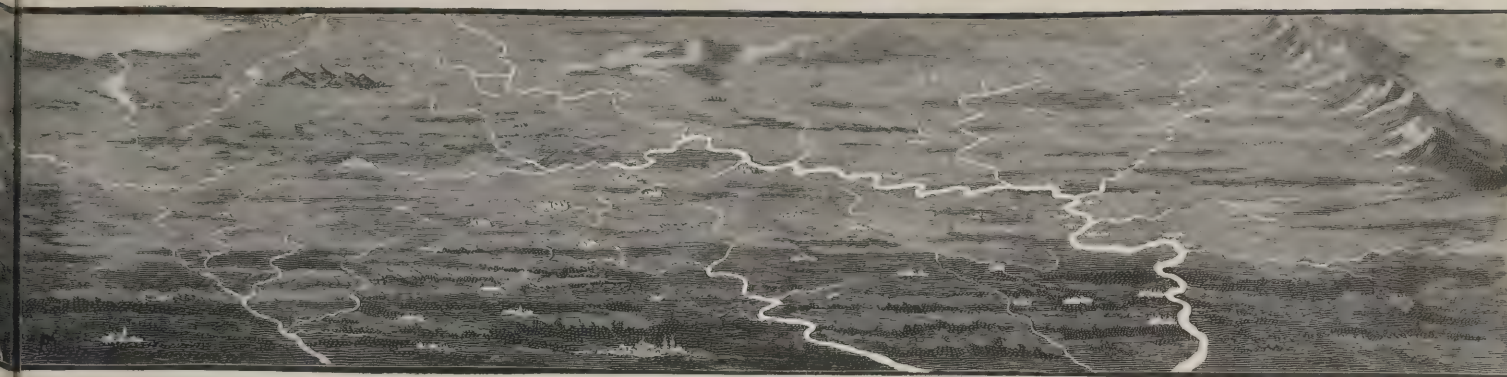
1. **The extreme length** of Europe from north-east to south-west is about 3,500 miles. The population is about six times that of the United States.

2. **Its water boundary**, if a continuous line, would reach four fifths of the distance around the world.

3. **The British Isles** are separated from the continent by the North Sea, which has an average depth of about 600 feet. There is much evidence* to show that

they were formerly a part of the main-land. Sicily, Corsica, Sardinia, and the Balearic (băle ār' ik) Islands are projecting portions of a volcanic chain, in the Mediterranean Sea.

4. **The marks of glaciers** of a former age are noticeable throughout Europe. The plains between the Baltic and Black seas are strewn with bowlders* and drift* from the Scandinavian plateau. England and Scotland are also strewn with



RUSSIA, FROM THE BALTIC SEA TO THE URAL MOUNTAINS. VOLGA RIVER.

There are many salt lakes in Russia, most of which are situated in the basin of the Caspian Sea.

13. Rivers.—The two principal water-sheds of Europe are the Alps and the Valdai (vāl'dāi) Hills. The Rhine, Rhone, Elbe, Danube, and other rivers flow from the former; the Dwina (dwē'nā), Don, Duna, and Volga, from the latter.

14. *Most of the rivers of Western Europe* are connected with one another by canals, and are navigable.

15. Climate.—Europe enjoys a more equable climate than any other grand division situated in corresponding latitudes. Its mildness is due, chiefly, to the south-westerly winds, which are warmed by the water of the Gulf Stream.⁵

16. *Rain* is most abundant on the western coasts.

17. Vegetation.—The extremes of luxuriance* and sterility* which characterize other continents are not found in Europe.

18. *The tundras*, or frozen marshes, of the Arctic Slope are covered with mosses and willows. South of this region, is a belt of dense forest, chiefly of pine, oak, elm, and ash.

19. *Grains, hemp, flax, and tobacco* are cultivated in the central regions. The cultivation of the grape, olive, orange, lemon, fig, mulberry, and cotton is confined, chiefly, to the Mediterranean Coast.

20. Animals.—Most of the wild animals have disappeared. The reindeer, white bear, and other animals valuable for their furs, are, however, found in the more thinly settled regions; the wolf and wild boar are common in the forests; and the chamois (shām'mŷ) and i'bex inhabit the Alpine heights.

21. *Water-fowl* are numerous. The sardine (sār'deen), herring, pilchard, anchovy (ān chō'vŷ), and other fish suitable for food, abound in the surrounding waters.

22. Minerals.—Coal, iron, and copper are very widely distributed. Silver, zinc, and lead are plentiful in the central highlands; quicksilver, niter, sulphur, and salt, in volcanic regions. Coral of great beauty and value is obtained in the Mediterranean Sea.

23. People.—The inhabitants of Europe, numbering about 330,000,000, belong to the Caucasian and Mongolian races.



ADRIATIC SEA,—AUSTRIA,—DANUBE RIVER AND VALLEY.

CARPATHIAN MOUNTAINS.

ROUMANIA,—BULGARIA.

BLACK SEA.

till* and boulders; each boulder having a face ground flat, and scored with parallel scratches.

5. The port of Hammerfest, the most northern town in Europe, situated about three degrees north of the Arctic Circle, is never ice-bound. This is due to the influence of the winds and water from the Gulf Stream. Toward the eastern border of Europe, however, the climate is subject to great extremes of heat and cold.

6. Point to and mention, the principal mountains, rivers, and cities represented in these transcontinental views.

* *lux ū' ri' ance*, over-abundance.

ēv' i' dence, testimony, proof.

ste rŭ' i' ty, barrenness, unproductiveness.

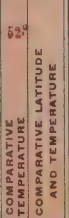
bōw' der, a large, smooth stone.

* *drift*, loose earth and rocks distributed over parts of the earth's surface.

This now, also, refers to water forced onward by an ocean current.

fill, a deposit of clay, sand, and gravel.

11:44 A.M.





THE BRITISH ISLES.

GENERAL QUESTIONS.

Location.—What do the British Isles comprise? By what waters are they surrounded? Which country has the most irregular coast line? Which contains the most mountains?

Latitude, Longitude, and Climate.—What parallel of latitude crosses the southern part of England?—the northern part of Scotland? What parts of North America and Asia are between these parallels? (*See margins of the map.*) What is the longitude of places on the meridian which passes through Greenwich, near London? What is the mean annual temperature of the southern part of England?—of Newfoundland, at the same latitude— 51° ? (*See brown numbers in left margin.*) What is the mean annual temperature of the northern parts of England and Ireland?—of Labrador, at the same latitude? What is the chief cause of this difference in temperature? (*See page 14, paragraphs 14 and 15.*)

Cities.—Mention the principal city in the British Isles,—in Scotland,—in Ireland.

ENGLAND AND WALES.

In what direction from England is France?—Ireland?—Scotland? What natural boundary between England and Scotland? What sea north-west of England? What channel south?—south-west? What island south of England? What group of islands near the coast of France belongs to England? *Ans.*—*Channel Islands.* What cape projects from the south-western part of England?

What mountains in the north-west?—south-east?—south-west?

Mention two of the longest rivers in England. On which is London situated? Into what does that river flow? Into what does the Severn flow? What minerals are found in England and Wales? (*See small chart.*) Mention the principal manufactures,—the principal fisheries.

What large sea-port in the north-western part of England? On what river is Liverpool? Where is Newcastle?—Birmingham (*đỉnh núi ả*)?

SCOTLAND.

What firths indent the eastern coast of Scotland?—its northern and western coasts? What firth south of Scotland? What water separates Scotland from Ireland? What islands north?—north-west?

In what part of Scotland are the Highlands?—the Lowlands? Mention two mountain ranges. Mention four mountain peaks. (*See sectional diagram under map.*) What river between Scotland and England? Mention the principal rivers,—lakes,—cities. What city is on the Clyde River? What is the length of the longest day at the northern part of Scotland?

IRELAND.

What bays indent the west coast of Ireland? Where is Dublin Bay?—Cork Harbor? Which is the most northern cape of Ireland?—the most southern? Where is the Giant's Causeway?

In what part of Ireland are its lowlands? Which are the principal mountains of Ireland? Which is the largest lake, or lough, in Ireland? What beautiful lakes in the south-west?

Which is the longest river of Ireland? Through what two lakes does it flow? What are the principal products? What city is the metropolis and capital? Which is the largest city in the north?—in the south?

Commercial Geography.—Which are the principal sea-ports of England?—of Scotland?—of Ireland? At what port in the southern part of Ireland do steamers stop, on their way to and from Liverpool?

EXPLANATION OF THE ILLUSTRATIONS.—In the center, the Houses of Parliament, London; at the top, a view in the lake region of England; on the right, a street in Dublin; on the left, the Giant's Causeway; at the bottom, on the left, Edinburgh, with castle in the distance; at the bottom, on the right, the Clyde River.

24. **The British Empire** comprises the British Isles, Australia, New Zealand, and possessions in North America, India, South Africa, and other parts of the world. It covers about one sixth of the land surface, and is the most powerful and populous empire of the world.

25. *The British Isles* include Great Britain and Ireland, besides a number of small islands near them.

26. *Their outline, or coast*, is very irregular, having many excellent bays and harbors, wonderfully adapted to commerce.

27. *Great Britain and Ireland*, with less than half the area of Texas, have a population about three fifths that of the United States.

28. *Great Britain* is divided into three parts, England, Scotland, and Wales.

29. *Its surface* is rugged in the north, and level in the south. It is well watered by beautiful rivers, many of which are navigable. These furnish water-power for manufacturing.

30. *The principal foreign possessions* of Great Britain are the Dominion of Canada, Newfoundland, British Guiana, India, Australia, New Zealand, and Cape Colony.

31. *The soil* of England and of the lowlands of Scotland¹ is very fertile, and carefully cultivated. Fine horses, cattle, and sheep are raised in England.

32. *The agricultural products* are wheat, oats, hops, barley, and potatoes.

33. *Grain and provisions*, in immense quantities, are annually imported to England from Russia, Austria, and the United States.

34. *In Ireland*, the surface of the land is undulating, and the soil, productive. Flax, hemp, and potatoes are the principal crops.²

35. *The mountainous regions* in the north of England, and in Wales, are very rich in minerals. Coal, iron, lead, tin, copper, zinc, and salt are abundant.³

36. *The best wooden and iron ships* are built in England and Scotland, and the English flag floats over ships in every quarter of the globe. Almost half a million men are engaged in sailing these vessels.

37. *The manufactures* of England, stimulated by the presence of vast stores of iron and coal, are very exten-

sive. The principal manufactures are cotton, woolen, linen, silk, and leather goods, carpets, machinery, hardware, cutlery, tools, and earthenware.

38. *There are three classes of people* in Great Britain, the nobility, the middle class, and the laboring class.⁴

39. *The people of England* are mainly of Anglo-Saxon origin, with a mixture of Norman-French, and others who, at different times, invaded the country and settled there.

40. *The people* of Scotland, Ireland, and Wales are, in part, descendants of the early Celts.

41. The people of Great Britain and Ireland are advanced in civilization and education, and many are skilled in the arts and sciences.

42. *The British government* is a limited monarchy. The laws are made by Parliament, which consists of two houses, corresponding to those of the United States Congress. The higher house is composed of lords who inherit* their seats; while the other, the House of Commons, is composed of representatives elected by the people. The ruler is a king, or queen.¹⁰

43. *London*, the capital, is the metropolis of the world, being the center of the world's wealth and business. The city covers an area of about 120 square miles. It is situated on both sides of the Thames (tēmz) River, which is spanned by many elegant bridges.

44. *Liverpool*, the second city, is the chief center of trade and travel between the United States and Europe.

45. *Man'ches ter* is the foremost city in the world for the manufacture of cotton goods.

46. *Birmingham* is celebrated for the manufacture of hardware, cutlery, engines (ēn'jīns), and machinery.

47. *Glasgow* (glās'gō) is the largest city in Scotland, and the chief commercial center. It is noted for its iron ships, which are built on the Clyde River.

48. *Edinburgh* (ēd'in būr rō) is the seat of learning and the center of literature and education. Edinburgh Castle is one of the most celebrated in the world.

49. *Dublin*, the capital of Ireland, is a manufacturing and commercial city.

50. *Belfast* is a large manufacturing city.

51. *The silks* of Dublin and *linens* of Belfast are noted.

1. **The Lowlands** of Scotland are in the south; the **Highlands**, in the north.

2. **Owing to the influence of the Gulf Stream**, the climate of Ireland is mild and moist, and its fields are fresh and green throughout the year—hence its popular title, Emerald* Isle. Labrador, although in the same latitude, is covered with snow nearly all the year.

3. **The value of the coal** annually produced in the British Isles is about \$250,000,000; and of iron, about \$30,000,000.

Their six principal exports are cotton goods, about \$400,000,000 annually; iron and steel, \$150,000,000; woolen goods, \$100,000,000; linen goods, \$50,000,000; coal, \$50,000,000; and machinery, \$48,000,000.

Their six principal imports are corn and flour, \$300,000,000; cotton, \$250,000,000; sugar, \$120,000,000; wool, etc., \$120,000,000; wood and timber, \$84,000,000; and tea, \$55,000,000.

4. The nobility possess most of the land, and live on the rents; the **middle class** comprises merchants, manufacturers, and farmers.

5. **Other important Cities.**—In ENGLAND,—Leeds excels in woolen manufactures; Sheffield, in cutlery; and Kidderminster, in carpets. Bristol, Portsmouth, and Hull, are large sea-ports.

6. In SCOTLAND,—Dundee is noted for commerce, ship-building, and linen goods.

7. In WALES,—Merthyr Tydvil (mer'ther tid'vil), the largest town in Wales, is in the center of an iron and coal district. Car' diff, its port, is noted for fine docks and iron ship-building yards. Swansea (swōn'sē) is noted for copper and tin smelting.

8. In IRELAND,—Cork is celebrated for its fine harbor; and Limerick, for linen manufactures.

9. **Historical Notes.**—In early times, England, Scotland, and Ireland were independent of one another, but they are now united under the name, The United Kingdom of Great Britain and Ireland.

10. *The sovereign*, Victoria, is styled Queen of Great Britain and Ireland, and Empress of India.

* in hēr'it, to take by descent from an ancestor.

ēm'e rald, a precious stone of a rich, green color.



52. Sweden and Norway form the Scandinavian Peninsula, the Scandinavian Mountains constituting a natural boundary between them. The greater part of Sweden is level; but Norway is mountainous, with a rugged coast, broken by islands and deep bays, called fiords.

11. Other important Cities.—In SWEDEN,—Gothenburg (gō'thēn bŭrg) is partly built on piles driven into marshy land. In NORWAY,—Bergen exports fish in large quantities.

12. Historical Notes.—The early inhabitants of Norway, Sweden, and Denmark were called Northmen, or Norsemen. Their sailors were brave and adventurous. Between the 8th and 11th centuries, they made great discoveries. It is said that they discovered Iceland, Greenland, and the eastern coast of the United States, and,

53. The mountains are covered with valuable timber, which is used for ship-building in nearly every country of Europe. The mines yield coal, iron, copper, and zinc.

54. Commerce, ship-building, and fishing are the leading industries. The exports are lumber, grain, fish, and iron.

55. The chief agricultural products are oats, rye, wheat, and potatoes.

56. Each country has its own constitution, capital, and legislature; but both are ruled by the same king.

57. Stöck' hōlm is the capital and largest commercial city of Sweden; Christiania (krī's tē ā'nē ā), of Norway.

58. Denmark comprises the northern part of the Peninsula of Jutland and the islands near it in the Baltic Sea.

59. Its surface is very low. In some places, the land, being below the sea-level, is protected by dikes.*

60. Its soil is fertile; the climate, moist and mild. Much of the land is used for pasture. The chief products are grain and vegetables.

61. The occupations of most of the people are farming, stock-raising, commerce, and fishing.

62. The Danes, Swedes, and Norwegians are called Scandinavians. Denmark is a kingdom.

63. Copenhagen (kō pēn hā'gēn), the capital and metropolis of Denmark, is finely situated for commerce.

for a while, ruled in England and Ireland. Except in Iceland, their explorations and settlements were neither useful nor permanent. Three successive Dan'ish kings (Canute, Harold, and Hardicanute) ruled England from 1017 to 1042. Norway was annexed to Sweden, in 1814. Denmark's possessions include Greenland, Iceland, and the Fa'roe Islands; also, three islands of the West Indies,—Santa Cruz, St. Thomas, and St. John.

* dikes, mounds thrown up to prevent overflowing of water.

GERMAN EMPIRE, THE NETHERLANDS

SCALE AS 1:4,978,000, OR 78 MILES TO THE INCH

Scale of Statute Miles 0 50 100

Scale of Steamship Time (15 Miles per Hour) 0 2 4 6 Hours

COMPARATIVE AREA

400 SQUARE MILES

PRINCIPAL PRODUCTS AND PRINCIPAL SEAPORTS

Highlands, Buff. Lowlands, Green.

THE TERRITORIES OF SOME SMALL STATES OF THE GERMAN EMPIRE ARE INDICATED BY FIGURES CORRESPONDING TO THE NUMBERS AS FOLLOWS:

STATES.	CAPITALS.	STATES.	CAPITALS.
1. SAXE-ALTEMBERG, . . .	Altenburg.	10. LIPPE DETMOLD, . . .	Detmold.
2. SAXE-MEININGEN, . . .	Meiningen.	11. WALDECK, . . .	Arolsen.
3. SAXE-COBURG-GOTHA, . . .	Coburg & Gotha.	12. BRUNSWICK, . . .	Brunswick.
4. SAXE-WEIMAR-EISENACH, . . .	Weimar.	13. MECKLENBURG-SCHWERIN, . . .	Schwerin.
5. REUSS-GREITZ, . . .	Greitz.	14. MECKLENBURG-STRELITZ, . . .	Strelitz.
6. REUSS-SCHLEIZ, . . .	Schleitz.	15. OLDENBURG, . . .	Oldenburg.
7. SCHWARZBURG-RUDOLSTADT, . . .	Rudolstadt.	16. LUBECK, . . .	Lubeck.
8. " SONDERSHAUSEN, . . .	Sonderhausen.	17. HAMBURG, . . .	Free Cities.
9. SCHAUMBURG-LIPPE, . . .	Bückeburg.	18. BREMEN, . . .	Bremen.

STATES.	CAPITALS.	STATES.	CAPITALS.
ALTENBURG,	Altenburg.	10. LIPE DETMOLD,	Detmold.
MEININGEN,	Meiningen.	11. WALDECK,	Arolsen.
COBURG-GOTHA,	Coburg & Gotha	12. BRUNSWICK,	Brunswick.
WEIMAR-EISENACH,	Weimar.	13. SACHSEN-WEIMAR,	Weimar.
GRASSBACH,	Grassbach.	14. MACKENBURG-STRELTZ,	Strelitz.
SCHLEITZ,	Schleitz.	15. OLDENBURG,	Oldenburg.
WARZBURG-RUDOLSTADT,	Rudolstadt.	16. LUBECK,	Lubeck.
SCHNORRHAUSEN,	Schnorhausen.	17. HAMBURG,	Hamburg.
BUCKENHOF,	Buckenhof.	18. BREMEN,	Bremen.

Free Cities.

THE GERMAN EMPIRE, AND THE NETHERLANDS, OR HOLLAND.

GERMANY.

Location.—In what part of Europe is the German Empire? What country forms part of its eastern boundary?—its south-eastern?—its southern?—its south-western? What two countries west? What sea north?—north-west? In what direction from Germany is Denmark? What arms of the Baltic Sea indent the northern shore of Germany?

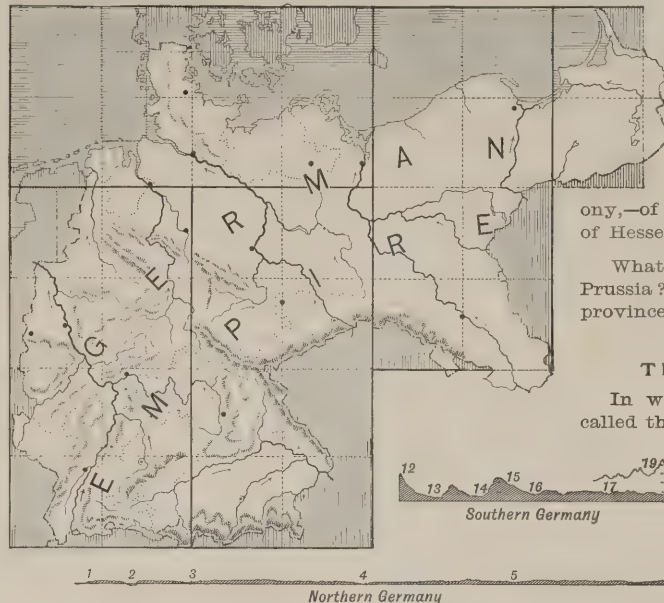
Latitude and Longitude.—What parallel of latitude crosses the southern part of the German Empire?—the northern part? What parts of North America are crossed by those parallels?

Surface.—In what general direction does the surface of Germany slope? What part of Germany contains the highest land? (See small chart.) What mountains on the southern boundary?—on the south-western?—in the center?

Mention four of the largest rivers in Germany. Which flow into the North Sea?—into the Baltic Sea? In what country is the source of the Rhine?—its mouth? Through what lake does it flow? What branches of this river rise in France?—what one in Bavaria? Where does the Danube River rise? What two tributaries of the Danube flow through Bavaria? How can a boat go from the Rhine River to the Danube River? What two rivers having their sources in the Austro-Hungarian Monarchy cross the German Empire? Into what does the Weser (*wä'zer*) flow?

Divisions.—Which is the largest division of the German Empire? What three divisions in the southern part of the empire? Locate Saxony,—Hesse (*hēss*),—El'sass,—Oldenburg,—Mecklenburg,—Lunenburg (*Lū'nen burg*).

Climate and Productions.—What is the mean annual temperature of the southern part of the empire?—of the northern? What causes this difference? How does the



1. The Dollart.—2. Jahde River, and Mouth of Weser.—3. Hamburg.—4. Stettin.—5. Vistula R.

temperature compare with that of Newfoundland and Labrador, in the same latitude?—of Kamchatka (*kām chāt'ka*)?

What minerals are found in Germany? In what parts? What are the principal agricultural products of Germany? What are the principal manufactured articles?

Cities.—What cities are near the coast? Locate each. Mention and locate the capital. Mention the three free cities. (See list at foot of map.) Which is situated on the Weser River? Where is Lübeck?—Hamburg?—Frankfort?—Dresden?

What large city in the south-eastern part of Prussia? On what river is it? Mention and locate the capital of the Kingdom of Bavaria,—of Saxony,—of Wurtemberg,—of the grand duchy of Baden (*bā'den*),—of Hesse.

What large city in the northern part of Saxony?—in East Prussia? Which is the largest city on the Rhine? In what province of Prussia is that city?

THE NETHERLANDS, OR HOLLAND.

In what direction from the German Empire is the country called the Netherlands, or Holland? What water north and west of the Netherlands?—country east?—south? What large arm of the North Sea indents the coast? What islands off the coast? Is the surface of the Netherlands high, or low? What important river crosses this country? What are the principal agricultural and dairy products?—the manufactured products?

Mention and locate the three principal cities. Which is the capital? Which is the largest city? On what river is Rotterdam? What city is on an inlet of Zuyder Zee (*zō'der zē*)? What short, water communication has Am'sterdam with the North Sea?

Commercial Geography.—Mention the sea-ports of Germany?—of the Netherlands? On what waters would a vessel sail in going from New York to Hamburg?—from Dantzic to Copenhagen?—from Bremen (*brēm'en*) to London?

1. The German Empire is chiefly in Low Europe. Its surface rises gradually to the mountains on its southern border.¹

2. Its area is about two and a half times that of Kansas, while its population is nearly as large as that of the United States.

3. Its fertile soil, extensive forests, rich mines, numerous mills and factories, yield valuable products.² The principal agricultural products are grain, grapes, tobacco, flax, hemp, and sugar-beets.

1. The northern part of Germany is a low plain, and is called Lower Germany. The central and southern part contains plateaus and mountains, and is called Upper Germany.

2. Agriculture and stock-raising give employment to more than two fifths of the population; mining and manufacturing, to more than one third. Coal, iron, lead, and zinc, are abundant. The mineral springs of Germany are celebrated. Forestry receives great attention, and is under the control of the government. As trees are

4. The people are intelligent, and industrious, and fond of home, music, and country. They claim to have the best schools in the world.

5. The German Empire comprises the kingdoms of Prussia, Bavaria, Saxony, and Wurtemberg, besides grand duchies,* duchies,* principalities,* and free cities. Each of these has an independent local government. The King of Prussia is Emperor of Germany.³

6. Ber'lin, the capital of the Kingdom of

cut for timber, new ones are planted in their places. Vineyards cover the valleys and slopes of the Rhine and the Main. Horses, cattle, and sheep are raised in large numbers, in North Germany.

3. Baden is the principal of the six grand duchies; and Brunswick, of the five duchies. There are seven principalities, three free cities, and the imperial territory, called by the Germans Elsass-Lothringen (*lōt'ring en*), and by the French, by whom it was ceded to Germany, Alsace-Lorraine (*āl sāss' lor rān'*).

Prussia and of the German Empire, has nearly as many inhabitants as the City of New York. Its manufactures and commerce are extensive. Its university and other educational and scientific institutions are celebrated for excellence.

7. Hamburg and Bremen are the two cities of Germany, whence most of the emigrants leave their native country for the United States.⁴ These, with Lü'beck, are the three free cities of Germany.

4. About 200,000 emigrants annually left Germany for the United States, during the past few years. Since 1820, more than 3,000,000 Germans have made this country their home. This is almost equal to the number of emigrants from Ireland who have settled in the United States during that time.

* *dūch'y*, a territory governed by a duke; *grand duchy*, a territory governed by a grand duke; *principality*, a territory governed by a prince. The Emperor of Germany is called the kaiser (*kā'zer*).

8. **The Netherlands, or Holland.**—*This country is wholly in Low Europe. Its area is less than one sixth that of Kansas.*

9. *Its surface is mostly low and flat. Those parts which are near the coast are below the sea-level, and the water is kept from overflowing the land by means of dikes, or mounds, which are maintained at a great annual cost. The country is crossed, in all directions, by streams and canals.*⁵

10. *Its climate*, like that of England and Western Germany, is moist and foggy. It is celebrated for cattle-raising, butter and cheese-making.

11. *Hague* (hāg) is the capital of the Netherlands.

12. *Amsterdam*, the metropolis, is noted for its commerce, banking, and diamond-cutting. Like Venice, its houses are built on piles driven into the sand, and many of its streets are canals.

13. **The Austro-Hungarian Monarchy.**—*This empire comprises the empire of Austria and the kingdom of Hungary. The emperor of Austria is king of Hungary.*

14. *Its surface is mountainous, except the great, treeless plain of Hungary, which is in the eastern part.*

15. *The mountains yield valuable minerals; the forests, lumber; and the plains and valleys, grain and grapes. Iron, coal, and salt are very abundant. Cattle and sheep are numerous on the pastures. Bears and other wild animals are hunted in the woods.*

16. *The principal occupations* are agriculture, herding, and mining. The people comprise many nationalities. The court languages are the German and Hungarian.

17. *Vienna* (ve ēn' nā), on the Danube River, is the capital and metropolis of the empire. It is a great center of traffic, and one of the most beautiful cities in the world.

5. **Water is removed from the canals** by means of pumps. When the canals are frozen over, skating is enjoyed by old and young of both sexes. Portions of the land were long ago covered by the water of the North Sea. Remains of forests may be seen under the water, and ancient roads and traces of villages are found under the swamps.

6. **Russia**, with its possessions in Asia, is called the Russian Empire, which comprises more than one seventh of the land on the earth's surface. Notwithstanding its large population, it is, on account of its great area, the most thinly-settled country in Europe.

7. **Many of the mines** are worked by convicts, who have been exiled* from their homes for crimes and political offenses.

8. Large portions of the south are **treeless plains**, on which grapes and other fruits are raised, in abundance. Here snow seldom falls.

9. **The commerce of Russia** is greatly hindered by the closing of its northern and western harbors, by ice, for several months in the year. The fairs at Nizhnee Novgorod (nīzh' nē nōv gō' rōā) and Kharkov (kār kōf') are celebrated. At the former, over 200,000 merchants, from all parts of the world meet every year for trade. To attend the latter, about 80,000 sledges convey the people over the snow, in winter.

10. **The Russian Empire** is next to the British Empire, in extent and population. The people are slow-going, and have not advanced in civilization with the other nations of Europe. They comprise numerous tribes, many of which are hardly civilized. Education is confined to the wealthy.

11. **St. Petersburg** was built by, and named after, Peter the Great. Situated upon small islands in the Neva River, it is very low, but healthy. Some of the government buildings are magnificent, notably the emperor's winter palace.

12. **Moscow** is celebrated for the citadel, called the Kremlin, which includes a cathedral, churches, palaces, forts, and barracks.

13. **Other important Cities.**—In the German Empire,—*Breslau*, on the Oder, is

18. *Bu'da-Pesth* (pěst), two cities on opposite sides of the Danube, but connected by a fine suspension-bridge, form the capital and commercial center of Hungary.

19. *Prague* (prāg) is an important manufacturing and commercial center.

20. *Trieste* (trē ēst') is the chief sea-port of the empire.

21. **Russia** is the largest country in Europe. Its area is about two thirds that of the United States, while its population exceeds that of the whole of North America.⁶

22. *Its surface*, generally, is low and level. Its highlands are the Caucasus Mountains in the south, the Ural Mountains in the east, and the Valdai Hills in the interior.

23. *Its mines* yield all the precious and useful metals. Gold, silver, and lead abound in the Ural Mountains.⁷

24. *Its principal rivers* are navigable, when not blocked with ice.

25. *Its climate* is very cold in the north, temperate in the middle, and hot in the south. Except the cold, marshy region of the north, and the grassy and salt plains of the south-east, Russia is covered with forests of valuable timber, and farms which yield grain in abundance. Three fourths of the inhabitants are engaged in agriculture.⁸

26. *Foreign commerce* is carried on by way of the Baltic and the Black Sea. Wheat is exported to England, in immense quantities; and the trade with China, especially in tea, is very extensive.

27. *Domestic commerce* is conducted at annual fairs.⁹

28. *The czar* rules with absolute* power. The people have no voice in legislation.¹⁰

29. *St. Petersburg*, the capital and largest city, is extensively engaged in commerce and manufactures.¹¹

30. *Moscow* (mōs' kō), formerly the capital of Russia, is the winter residence of the royal family.¹²

a famous wool-market. *Dres'den*, the capital of Saxony, is celebrated for works of art. *Munich* (mu'nik) is the capital of Bavaria.

14. In the Netherlands,—*Rotterdam*, on the Meuse (mūz) River, is remarkable for street canals and extensive commerce.

15. In Russia,—*Warsaw* was the capital of the former kingdom of Poland. *Riga*, on the Baltic, and *Odes'sa*, on the Black Sea, are the chief commercial cities; the latter being the greatest grain market of Europe. *Cronstadt* (krōn' stăt) is the great naval station of the empire, and is the port of entry, as well as the defense of the capital.

16. **Historical Notes.**—The name *Netherlands* means low countries; *Holland*, muddy, or marshy, land.

17. In 1815, *Holland* and *Belgium* formed the kingdom of the Netherlands; but, since 1831, they have been separate kingdoms.

18. In 1870, *Napoleon III.* declared war against Prussia. The following year, all the German states were united to form the German Empire. The French were defeated, and Napoleon III. was taken prisoner.

19. The foundation of the *Russian Empire* was laid in 862, by the Rus, a body of Scandinavians under Rurick, whose descendants ruled for 700 years. Its most distinguished ruler was Peter the Great, who governed the empire more than forty years (until 1725). He learned seamanship by cruising on English and Dutch ships; and, in disguise, spent a long time in Holland (the Netherlands) working as a ship-builder, and learning philosophy, astronomy, and geography.

20. *The Kingdom of Poland* was dismembered, the most of it becoming a part of Russia. The other parts were taken by Prussia and Austria.

21. *Other important events in Russia* were the burning of Moscow by the Russians and the consequent retreat of the French, under Napoleon I. (1812); the Crime'an War (1853-'5); the abolition of serfdom, or slavery (1861); the sale of Alaska to the United States (1867); the Turkish war (1878); and the Nihilist troubles (1879).

* *Ex'iled*, driven from one's country.

Ab'solute, arbitrary, despotic.



31. The Kingdom of Italy comprises the middle peninsula of Southern Europe, and the islands of Sicily and Sardinia.¹ Its latitude is the same as that of the New England and Middle Atlantic States.

32. Its mountains, plains, mountain passes, valleys, streams, and lakes are celebrated for their picturesque beauty.

33. The plain of the Po is said to be the most fertile in the world.² The narrow plains along the coasts are marshy and unhealthy.

34. Agriculture is the leading occupation of the people. In the north, where the climate is temperate, grain is cultivated; and in the warm south, orange and olive groves, and vineyards, cover large sections. The mulberry-tree is extensively cultivated for the support of the silk-worm.

35. The manufactures include silks, velvets, olive-oil, and wine.

36. Rome, the capital, is one of the most famous cities in the world.³

1. Italy is divided into 69 provinces, which are distributed among 16 compartments; the principal of which are Lom'bardy, Piedmont (*pèd' mònt*), Venetia (*vè nè' shè ò*), Tuscany, Rome, Campania (*kìm pàn' yà*), and Sicily.

2. The Po, the largest river in Italy, is fed by the outlets of Co'mo, Maggiore (*màd jò'rà*), and other lakes of the Alps.

3. Rome was founded by Ròm'ù lùs, about 750 years before the Christian era. The grandest and most noted ruins of the ancient city are the Forum,* Coliseum,* baths, and several triumphal arches. It was built on seven hills, and has been called the Eternal City. It is divided into two parts by the Tiber River. The present city contains St. Peter's, the most magnificent cathedral in the world; the length of which is over 600 feet; the width, 280 feet; and the height, 430 feet. Adjoining it, is the palace of the Vât'ican, the residence of the Pope. The museums and galleries of Rome contain many of the best paintings and other works of art in the world. Rome is, therefore, a city of art and artists.

37. Naples, the largest city in Italy, is situated on the beautiful Bay of Naples.⁴ In and around the city, roses and other flowers bloom in the gardens, and orange-trees bear fruit in the open air, even in winter; while in New York, which is in the same latitude, the winters are remarkable for cold weather and deep snow.

38. Mil'an contains a grand cathedral and celebrated works of art.⁵

39. Venice is built on seventy small islands, between which are canals, used for streets. People, usually, go from one part of the city to another in gondolas* instead of carriages. The houses are built on piles.⁶

4. Near Naples, is the celebrated volcano Ve su'vi us, and the ruins of Pompeii (*pòm pà' yè*) and Her cu la'ne um, two cities destroyed by eruptions of the volcano, in the first century. Silks, macaroni,* and coral ornaments are manufactured in Naples.

5. The Cathedral of Milan, built of white marble, is one of the most celebrated in the world. On its spires are about 5,000 statues.

6. Venice was built on islands at the head of the Adriatic Sea, because, when Italy was invaded by barbarians in the fifth century, many of the inhabitants fled to the islands for refuge. In the fifteenth century, it was one of the most prosperous and powerful cities in the world. Its commerce and manufactures brought it great wealth. It is celebrated for fine glass ware. (See p. 113, notes 11 and 12.)

* *jò' rum*, a market-place, or public place, *gòn' do làs*, flat-bottomed pleasure-boats. In Rome for trials and orations. *còl' è sè' um*, an amphitheater in Rome.

màe a rò' nì, an article of food made in Italy, of wheat flour, in long, slender tubes.

COMPARATIVE TIME WHEN NOON AT LONDON.



BELGIUM, FRANCE, SWITZERLAND, AND NORTHERN ITALY.

GENERAL QUESTIONS.

Location.—In what part of Europe are these countries? In what direction are they from the German Empire?

Latitude and Longitude.—What parallel crosses the northern part of Belgium and France?—the central part of Italy? What is the longitude of the western part of France?

Outline.—What sea-coast has Belgium?—France?—Italy? What country has no sea-coast? Which is a peninsula? What waters almost surround it?

Surface.—Which of these countries has the most mountainous surface?—the most level surface? Which is the highest mountain wholly within Europe? (*See profile under map.*)

Climate.—What isotherm crosses the northern part? Which is warmer—France, or Canada?

Products.—What are the principal agricultural products?—manufactured articles? In what part are minerals found?

Cities.—What is the capital of France?—of Belgium?—of Switzerland?—of Italy?

Commercial Geography.—Mention the principal sea-ports on the English Channel,—on the Bay of Biscay,—on the Mediterranean Sea. What are exported from them?

Comparative Time.—What is the difference in time between the western part of France and the eastern part of Northern Italy?

BELGIUM.

What water would you cross, in going from England to Belgium? What country north of Belgium?—east?—south-west? In what direction does the land slope? What rivers flow through Belgium? Which is the largest? Where does it rise? Into what river does it flow? Mention the capital. Where is Antwerp?—Ghent? Liege (*lîj*)?

SWITZERLAND.

By what countries is Switzerland surrounded? Mention its natural boundaries? What mountains are in the north-



Belgium.—1. North Sea,—2. Ghent,—3. Brussels,—4. Ardennes Mts.
Switzerland.—1. Jura Mts.—2. Lake of Geneva,—3. Lake Thun,—4. Bernese Alps,—5. St. Gothard Pass,—6. Hinter Rhine,—7. Splügen Pass,—8. Engadina,—9. Rottian Alps.

western part?—in the south-western part? What lakes in Switzerland? What two large rivers have their sources in that country? Mention the capital.

FRANCE.

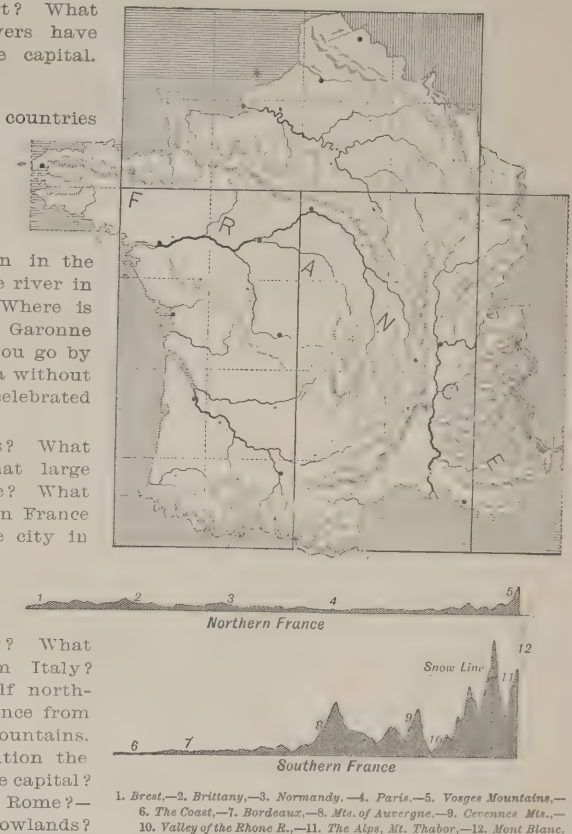
What are its natural boundaries? What countries border on it? When it is noon at London, what time is it at Paris?

Where is Corsica? What mountains are in the south-eastern part of France?—between France and Spain?—between France and Italy? Mention the highest mountain in the south-eastern part of France. What large river in Northern France?—in Western France? Where is its source?—its mouth? With what is the Garonne River connected by a canal? How can you go by water from Paris to the Mediterranean Sea without leaving France? What part of France is celebrated for silks?—wine?—porcelain?—chocolate?

What city is the capital and metropolis? What large city near the Gulf of Lyons? What large sea-port in the south-eastern part of France? What sea-port is nearest Paris? What sea-port in France is nearest the United States? What large city in France is nearest Belgium? What city on the Rhone River?—on the Loire (*lôir*)?

NORTHERN ITALY.

What two countries are north of Italy? What mountains separate those countries from Italy? What sea east of Italy?—west? What gulf north-west? What high mountains separate France from Italy? Mention three high peaks of these mountains. Where are the Apennine Mountains? Mention the principal river. Where do most of its tributaries rise? What is the capital? What large cities in the north-western part of Italy? Where is Rome?—Venice?—Florence?—Bologna (*bôlôn'yâ*)? In what part of Italy are its lowlands?



1. Brest,—2. Brittany,—3. Normandy,—4. Paris,—5. Vosges Mountains,—6. The Coast,—7. Bordeaux,—8. Mts. of Auvergne,—9. Cevennes Mts.,—10. Valley of the Rhone R.,—11. The Alps, Mt. Thabor,—12. Mont Blanc.

40. Belgium is a small kingdom, situated between France and the Netherlands. It is the most populous country in Europe.¹³ Its area is about one seventh that of Kansas.

41. *Its climate* is foggy, especially in the low, northern plain; and its soil is well cultivated and very productive.

42. *Brussels*, the capital and chief city, is noted for the manufacture of laces and carpets.

43. *The Republic of France*, one of the five great powers of Europe, is about two and a half

13. Belgium has a population of 485 per square mile (Rhode Island, the most densely populated of the United States, has 255 inhabitants per square mile).

14. *Mont Blanc*, the highest mountain wholly within Europe, is about 15,800 feet above the sea-level. Mt. El'boorz (Elbruz, or El-

times as large as Kansas. It is situated, chiefly, in Low Europe. Its south-eastern portion, which is in High Europe, rises to the Alps, the highest peak of which is Mont Blanc (*mon blân*).¹⁴

44. *The climate* of France is mild and moist. In the west and north, it is modified by the warm winds from the Atlantic Ocean.

45. *Agriculture* gives employment to three fourths of the people. The northern portion yields grain, potatoes, hemp, flax, and beet-root for sugar; the middle, grapes; and the south-

brooz) and some other peaks of the Caucasus, between Europe and Asia, are higher than Mont Blanc; Mt. Elboorz being over 18,500 feet, in elevation. *Glaciers* and *destructive avalanches* are characteristics of these mountains. Mt. Blanc has about forty glaciers. Above the height of 8,000 feet, it is covered with perpetual snow. Near it is

ern, maize and olives. Here, the mulberry-tree is cultivated for the support of the silk-worm.

46. *The manufactures* include silks, satins, cloths, wines, and ornaments.

47. *The schools* and higher institutions of learning are celebrated for their excellence.

48. *Paris*, the capital, is the center of wealth, art, science, and fashion.¹⁵ It is, next to London, the largest city in the world.

49. *Lyons* is noted for the manufacture of silks, satins, and velvets.

the Valley of Chamouni (*shâ môd nê'*), which contains a village of the same name, more than 3,400 feet above the level of the sea.

15. *Conspicuous in Paris*, are its broad streets, avenues, and boulevards; its palaces, parks, fountains, and statues; its celebrated churches and other buildings. The city is on both sides of the river.



CATHEDRAL, AMSTER.

CANAL, HOLLAND.

AMSTERDAM.

VIA MALA.

THE ARCH OF TRIUMPH, PARIS.

NOTRE DAME, PARIS.

50. Switzerland is a republic, composed of states, or cantons. Its area is about one fifth that of Kansas.

51. Its mountains, lakes, and water-falls are celebrated for their grandeur and beauty.¹⁶

52. The principal occupations of the people are agriculture, stock-raising, and manufacturing.¹⁷

53. Bern is the capital.

54. Geneva, at the outlet of Lake Geneva, is the largest city. It is celebrated for the manufacture of watches, jewelry, and music-boxes.

16. Among the celebrated mountains on the southern border of Switzerland are Rosa, St. Gothard (*sân gô târ*), and Great St. Ber'nard. In the interior, are Finster Aar'horn and the Jungfrau (*jông' frow*).

The principal lakes are Geneva, Constance, Neufchatel (*nû shâ têt*), Zurich (*tur' rîk*), and Lucerne (*lû sêrn*). Nearly all the lakes in Switzerland are becoming gradually smaller. This is caused by the wearing away and consequent lowering of the beds of the outlets, and by the depositing of soil in the basin of the lake, by the inlets. Several ancient lakes have thus disappeared.

17. Swiss manufactures include cotton and silk goods, embroidery, and watches.

18. Other important Cities.—In BELGIUM,—Ant'werp is the leading port.

19. IN FRANCE,—Marseilles (*mâr sâlz'*) is the chief sea-port. Bordeaux (*bôr dô'*) is a great market for fruit and wine. Lille (*lêl*) manufactures cotton and linen goods, etc. Havre (*hâv'r*) is the port of Paris.

20. IN SWITZERLAND,—Basel (*bâ' zel*) is an important manufacturing town.

21. Historical Notes.—The most distinguished general of his time was Napoleon Bonaparte, who was born in Corsica, an island belonging to France. At the head of the French army, he won many battles, and conquered several European nations. He was overthrown, in 1815, at the battle of Waterloo, in Belgium, by the allied armies of Europe, under the Duke of Wellington. Bonaparte was sent as a prisoner to the Island of St. (*sent*) He le' na, where he died.

55. The **Balkan Peninsula** is the most easterly of the three peninsulas of Southern Europe.

56. *It includes* Turkey in Europe, the kingdoms of Roumania, Servia, and Greece, and the principalities of Bulga'ria, Eastern Roume'lia, and Montenegro (tā nā'grō).

57. Except the plain, or valley, of the Danube; this is a *mountainous region*; cold in the north, but warm in the south.

58. *The chief occupations* of the people are agriculture and stock-raising.

59. **Turkey in Europe** is smaller than Kansas. Until recently, it comprised all the smaller countries between it and Austria. Its government is under the sultan, who is the ruler of the Turkish Empire,⁷ and the head of the Mohammedan religion.⁸

60. *The Turkish Empire* includes Turkey in Asia, Egypt and Tripoli (trip'oli), in Africa, and the western side of Arabia.

61. *Constantinople* is the capital of the Turkish, or Ottoman, Empire. Its situation commands the shores of both Europe and Asia, and the trade of the Mediterranean and the Black Sea.

62. *Salonica* (sā lō nē'kā) is the principal port of Turkey. It exports grain, tobacco, silk, and wool.

63. **The Kingdom of Greece** is a country of mountains, valleys, peninsulas, and islands.⁹ Its area is about one fourth that of Kansas.

64. *Its climate* is usually mild, but the summers are often very hot.

65. *The principal productions* are currants,* silk, and grapes.

66. *Ath'ens*, the capital, was formerly the center of the world's learning, culture, science, and art.

7. **The sultan** is an absolute monarch. His prime, or chief, minister is called the grand vizier (vīz'yer). The Turkish government is sometimes called the Sublime Porte, from the magnificent gate of the sultan's palace, where, in former times, the ruler was accustomed to sit and dispense justice.

8. **Mohammedanism**, or Is'lamism, is a religion founded by Mohammed, in the seventh century. Its doctrines, or revelations of Mohammed, are contained in a collection of writings, called the Ko'ran.

9. **Greece comprises** a northern part, or main-land, and a southern peninsula, called Morea (mō rē'ā), which is joined to the main-land by the Isthmus of Corinth (ēōr'inth). The Ionian (ī ō'nē ān) Islands on the west, and Eubœa (eu bœ'ā), Syra (sē'rā) and other islands, on the east, belong to Greece.

10. **The Spaniards** delight in games and in all kinds of amusements. The bull-fight is a national game. The means for travel are very poor. Education is in a backward state.

11. **Madrid** is famous for its royal palace, museums, and university.

12. **Other important Cities.**—IN ITALY,—*Gen'ōā*, the birthplace of Columbus, is an important sea-port. *Palermo*, in Sicily, has delightful winters. Its vineyards and orange groves are extensive. *Tū'rīn*, on the Po River, manufactures silk goods. *Florence*, on the Arno, is a beautiful city, noted for its museums and art galleries. *Pisa* (pē'zā), with Venice, Genoa, and Florence, attained great importance in the fifteenth century. Among the remarkable buildings of Pisa, is the Leaning Tower, built of white marble. Its height is 178 feet, and its diameter, 50 feet. Its top projects 13 feet beyond its base.

13. **SAN MARINO** (sān mā rē'nō), on the eastern slope of the Apennines, east of Florence, is an ancient and peaceful republic, containing 24 square miles, in area, and a population of 8,000. Although in Italy, it is independent. Similar to this, is the small republic of Andorra (ān dōr'rā), situated in a high, forest valley

67. **Spain and Portugal**, countries occupying the Iberian Peninsula, are separate kingdoms.

68. *Their surface* is a vast table-land traversed by parallel ranges of rugged mountains, with fertile valleys between them. The mountains contain deposits of coal, iron, lead, copper, silver, quicksilver, or mercury,* and salt. Precious gems are also found.

69. *The products* of the highlands are grass, grain, flax, and hemp; of the warm valleys, grapes, olives, and tropical fruits. The cork-tree grows in Spain. The merino (merē'no) sheep is raised for its valuable wool. The mulberry is extensively cultivated for the support of the silk-worm.

70. *The industries* of the people are farming, stock-raising, manufacturing, and commerce.

71. *The inhabitants* of both countries, like the Italians, are of Celtic origin. Their languages are different, although derived from the Latin. The wealthy classes are proud and high-tempered; the poorer classes, lazy and ignorant.¹⁰

72. *Mad'rid* is the capital and largest city of Spain.¹¹

73. *Barcelona* (bar ce lō'na) is the second city, and the chief sea-port.

74. *Lisbon* is the capital of Portugal, and the chief commercial city. It was destroyed by an earthquake, in 1755, and 60,000 of its inhabitants perished.

75. *Oporto* (ō pōr'tō) is noted for its export of wine.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter, or description, of one or more of the countries of Europe, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on one or more of the countries of Europe, as shown on page 32.

on the southern slope of the Pyrenees. These, with France and Switzerland, are the four republics in Europe.

14. IN SPAIN,—*Valencia* (vā lēn'shī ā) is noted for silks; *Sēv'ille*, for art; and *Mā'lā'gā*, for grapes and wines. *Pā'lōs* is the port from which Columbus sailed on his first voyage across the Atlantic. *Grā' nā' dā* is celebrated for the Alhām'bra, an immense Moorish structure, whose interior is gorgeous* beyond description. The town and fortress of *Gibral'tar*, in the southern extremity of Spain, belong to Great Britain. The fortress is on an immense rock, 1,400 feet in height. It commands the entrance to the Mediterranean Sea, and is of immense strength.

15. **Historical Notes.**—*About four hundred years ago*, Spain and Portugal were the foremost countries of Europe in commercial enterprise. Their fleets sailed on every known sea, and they took possession of every foot of territory that they could conquer and occupy.

16. *The discovery of America*, by Columbus, was due to Spanish enterprise. Both nations gained a firm foot-hold in the New World, and the whole continent of South America, except Guiana, is held by descendants of Spanish and Portuguese. Spain has valuable possessions in the West Indies.

17. *Civilization in Europe* began in Greece. It was introduced by Egyptians and Phœnicians. Greece became famous for its men of learning,—poets, philosophers, orators, sculptors, etc.

18. *Rome*, founded long after Greece, became the most powerful government in the world, conquering all the nations and tribes around the Mediterranean and the Black Sea, and penetrating into Britannia (now called England). Rome was greatest about the beginning of the Christian era.

* *ēir' rants*, a fruit dried for preservation; *mē'r'eu ry*, a heavy metal, liquid at common temperatures, but congealing at 40° below zero.
those of Greece are small grapes.
gōr' geōis, splendid, magnificent.

COMPARATIVE TIME WHEN NOON AT LONDON.



GENERAL QUESTIONS.

Location.—Where is Asia? Is it in the Northern, or the Southern, Hemisphere? By what is the Northern Hemisphere separated from the Southern? What other grand divisions are wholly in the Northern Hemisphere? Is the whole of Asia in the Eastern Hemisphere? (*See pages 25 and 27.*) What oceans form boundaries of Asia? What land boundaries has Asia? Which extends farther north—Europe, or Asia?

Latitude and Longitude.—What country in Asia is crossed by the Arctic Circle? What countries are crossed by the parallel of 40° north latitude?—by the Tropic of Cancer?

What countries of the Western Hemisphere are crossed by those circles? What is the length of the longest day in the central part of India?—in the central part of Siberia?

What meridian is near the extreme western part of Asia? What part of Asia is crossed by the meridian of 180° longitude? Is East Cape in east, or west, longitude?

What part of Asia is in the North Frigid Zone?—in the Torrid Zone?—in the North Temperate Zone?

Outline.—What two arms of the Arctic Ocean indent the northern coast of Asia? What five seas east of Asia? Into what ocean do they open? What gulfs open into the China Sea? What large bodies of water south of Asia? Where is the Arabian Sea? Where is the Red Sea? What seas are on the western boundary of Asia? Which is the largest sea wholly within Asia? Where is the Strait of Bab-el-Mandeb? of Ormus?—of the Bos'porus?

Peninsulas.—What two peninsulas project from the eastern coast of Asia? In what direction does Kamchatka extend? Where is the Malay Peninsula?—Hindoostan? What isthmus connects the Malay Peninsula with Siam?

Islands.—What islands north of Asia? What large group east? Where is Saghalin (*sā gā len'*) Island?—Formosa?—Hainan? What islands south-east of Asia? What island south of Hindoostan?—group south-west?

Capes.—Mention the most northern cape of Asia?—the most eastern? Where is Cape Com'orin?—Cape Cambodia?—Cape Lopatka?—Cape Romania (*rō mā nā a*)?—Dondra Head?

Mountains.—Where are the highlands?—the lowlands? In what general direction do the mountain ranges extend? Which countries are the most mountainous? What mountains are in the southern part of Siberia, and the northern part of Chinese Empire? What mountains north of India? Mention a mountain of this range. For what is it celebrated? *Ans. It is the highest mountain in the world.* How high is it?

Deserts.—What four countries contain extensive deserts? Which is the largest desert in Asia? Where is it? Where is a salt desert? What desert in Eastern Turkestan?—in Persia? What two deserts in Arabia?—in Turkestan?

Lakes and Rivers.—What lakes in Siberia? What is the general course of the rivers of Northern Asia? Mention three rivers of that section? Which is the longest? Where is the Ganges River? What two rivers unite and flow into the Persian Gulf? What seas and lakes have no outlets?

Countries.—In what part of Asia is its largest country? Of what empire is it a part? What empire is composed of islands? Mention the principal island of that empire. What empire in the eastern part of the main-land of Asia? Where is Farther India?—Afghanistan?—Beloochistan? What country between the Caspian Sea and the Persian Gulf? Which is the most western country in Asia?—the most south-western? What gulf east of Arabia?—south? What sea south-east?—west? In what part of Arabia is Oman?—Hedjaz?—Yem'en?—A'den?

What natural boundaries has the Chinese Empire on the



A PROCESSION IN CHINA.

THE CULTIVATION OF TEA.

A CHINESE JUNK.

THE GREAT WALL OF CHINA.

A PAGODA, OR TEMPLE.

north?—on the south-west? What seas east? What gulf south? What island east of this gulf? Where is the Peninsula of Corea? What strait separates it from Japan?

What part of the Chinese Empire contains the most mountains?—an extensive desert? In what general direction does the surface slope? What river in the western part? Mention the principal divisions of the Chinese Empire. Which do we know the most about? What large city in the south-eastern part? Where is the great wall?

In what direction is Empire of Japan from the Chinese Empire? What ocean east? What sea west?—north? What four islands in this empire? Which is the largest?—farthest north?—farthest south? What group, or chain, of small islands in the northern part of Japan?

What countries are comprised in Farther India? What sea is east?—gulf south?—east?—water west? What is separated from it by the Strait of Malacca? What islands south-east? What river flows through Burmah? Where is its source? In what direction and into what does it flow?

In what direction is British India from the Chinese Empire? What two countries north-west of India? What

natural boundary on the north?—east?—west? What island south-east? What cape projects from the southern part of India?—of Ceylon? In what part are the highlands?

What two large rivers flow through the north-eastern part of British India? What river flows through the north-western part? In what direction does the Ganges River flow?—the Indus River? What river in the western part of India? In what direction and into what does it flow?

Climate.—How does the temperature of Eastern Asia compare with that of the United States, in the same latitudes? What is the mean annual temperature of Northern Asia?—of the southern part of the Chinese Empire?

Products.—Where is the limit of trees? In what part of Asia is the fur district? Where are diamonds obtained?—pearls? In what countries is tea cultivated?—rice?—coffee?—cotton?—tobacco?—opium?

Cities in Northern and Western Asia.—What city on the Angara (*ān gā rā'* River?—on the Lena?—on the Irtysh?—on the Obi (*o' bē*)? Mention the largest cities in Turkey, in Arabia, in Russian Turkestan, in Persia. What is the capital of Persia?—of Afghanistan?—of Beloochistan? What two countries in Asia have their capitals in Europe? Mention those capitals.

Commercial Geography.—In what part of Asia are most of its railroads? Mention the principal sea-ports on the eastern coast?—on the southern coast?—on the western coast? What large cities are connected by railroads?

On what waters would you sail from Liverpool to Suez?—from Suez to Bombay?—from Bombay to Java?—from Bombay to Calcutta?—from Calcutta to Manila?—from Manila to Liverpool, by way of Bering Sea?

Comparative Time.—When it is noon at London, what time is it at Aden?—at Muscat?—at Calcutta?—at Canton?—at Osaka (*ō zā kō*)? In what part of Asia is it then midnight?

Map Drawing.—Construct an oblong diagram, fifteen measures from east to west, and thirteen from north to south; and on its sides, mark North-East Cape, Cape Lopatka, Cape Romania, and the Suez Canal. Draw the northern, eastern, southern, and western boundaries.

(SEE MAP ON THE FOLLOWING PAGE.)

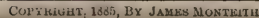
What kingdom east of the Chinese Empire is a peninsula? Where is Nepaul?—Bootan?—Pekin?—Tientsin?—Canton?—Nankin?—Hong Kong?—Shanghai?—Lassa?—Seoul?

Mention four large cities in Japan. Which is its capital? What is the capital of Siam?—of A'nam?—of British India? On what branch, or mouth, of the Ganges is it? What large city on the western coast?—on the south-eastern?

Where is the Cambodia River? Where is Saigon (*sā gōn'*)?—Singapore (*sin gā pōr'*)?—Manila?—Bokhara (*bōk ā rā*)?

1. The Kingdom of Burmah, of which Mandalay was the capital, has been annexed to British India, and is, therefore, subject to Great Britain.

A B 4:40 P.M. C D 6 P.M. E F 7:20 P.M. G H I 9:20 P.M.





ASIA.

1. **Position.**—Asia, the largest grand division, occupies the eastern part of the Eastern Continent. Its northern boundary reaches nearly to the parallel of eighty degrees, north latitude; its southern peninsula, nearly to the Equator. Like North America, it is situated in three zones,—the Torrid, North Temperate, and North Frigid.

2. **Size and Outline.**—Asia contains about one third of the land surface of the earth. It is twice as large as North America, and nearly five times the size of the United States. From Bering Strait to the Strait of Bab el Man'deb, its line of greatest length, the continent is 7,500 miles long, nearly one third the circumference of the earth.

3. **Islands.**—The islands of Asia form a continuous chain, from the Peninsula of Kam chat'ka to the Java (jä'va) Sea. They are a partly submerged mountain chain. All of them are volcanic. They contain a majority of the active volcanoes of the earth.

4. **Surface.**—The north-western part of Asia is a continuous plain; the south-eastern, an elevated plateau, traversed by high mountains. The line of greatest length is also the line which separates the highlands from the lowlands. From the Hin'doo Koosh, the mountain ranges of Asia radiate* toward the east.

5. *The Himalaya* (hīm ä'la ya) *System* is the main axis of the continent. The Thian Shan, Altai (äi tr'), and Stanovoi (stä nō vōi') form a broken chain of mountains extending from the Hindoo Koosh to Kamchatka. These two systems inclose the central steppe region of the continent, forming the basin of the Yang-tse-Kiang (ke äng'), and the Hoang Ho (ho äng hō').

6. *The Himalaya Mountains* are the highest in the world. The summit of Mt. Everest, the culminating peak, is over 29,000 feet above the sea-level.¹

1. Mt. Everest is more than 6,000 feet higher than the highest peak of the American continent. Several peaks in the vicinity, however, nearly equal it in height.

* *rä' äi äle*, to proceed in straight lines from a common center, like rays of light.



SCENERY IN THE TORRID, NORTH TEMPERATE, AND NORTH FRIGID ZONES.



RED SEA,—ARABIA,—PERSIAN GULF. PERSIA. ARABIAN SEA. INDUS RIVER.

HINDOOSTAN. PLAIN OF GANGES RIVER,—HIMALAYA MOUNTAINS,—CALCUTTA.

7. *The plateaus of Asia*, in their extent and height, surpass those of every other grand division. Those of Arabia, Persia, and Gobi (gō'bē) vary from 4,000 to 12,500 feet in height.

8. *Most of the peninsulas* of southern Asia are low plateaus, diversified by river valleys.²

9. *North of the Altai and Stanovoi Mountains*, is a series of plains, descending by terraces, to the Arctic Ocean.

10. *The high terraces* are rolling plains, covered with forests, or with wild grasses.

11. *The lowest terrace*, which borders on the Arctic Ocean, consists of tundras, or marshes, covered, principally, with growths of coarse moss. The surface of these is, in the northern parts, constantly frozen.

12. *Alluvial plains* are found along the courses of all the larger rivers.

13. **Lakes.**—The Caspian Sea and the Sea of Ar'al are thought to have been formerly arms of the ocean. Both are salt lakes. The former is below the sea-level. There are several other salt lakes, of which Lake Balkash (bāl kāsh') is the largest. All are situated in the central steppe region of the continent.

14. *Lake Baikal* (bī kāl') is the largest body of fresh water in Asia. It is about as large as Lake Erie.

15. *Lake Sirikol* (sīr e kōl'), the source of the Amoo (ā mōō'), or Ox'us River, has an altitude of 15,600 feet.

16. **Rivers.**—The rivers of Asia, though of great length, are distinguished by narrow valleys, rather than large basins. Most of them rise in the central highlands, from which they radiate in three directions,—north, east, and south, and mingle their waters with those of three oceans.

17. *The Obi* (ō'be) is an important river of the Arctic Slope.³ The *Amoor* (ā mōōr') of Siberia, and the *Yang-tse-Kiang* and *Hoang' Ho*⁴ of the Chinese Empire, are the great commercial highways.

18. *The Indus and Cambodia* are noted for the fertility of their valleys. The *Ganges*⁵ (gān'jēz), the sacred river of India, is navigable 1,500 miles from its mouth.

19. **Soil.**—The river valleys and the plains which are well watered are extremely fertile. The high, central region and the western plateaus are dry, sandy, and barren. These comprise marine plains containing salt.

20. **Climate.**—Every degree of temperature and moisture may be found in Asia, from that of the frozen tundras of Siberia, to that of the hot, pestilential jungles of India. The ar'id deserts of Arabia, Persia, Turkestan (tōōr kēs tān'), and Gobi receive little or no rain,⁶ while the southern slope of the Himalaya is annually inundated.*

21. *Siberia* is swept by icy winds from the Arctic Ocean; *Arabia*, by the hot and fatal si moom'. *India* is traversed by winds which scorch the entire surface for half the year, and flood it with rain the remaining part.⁷

22. *The winds* of the coast regions of Western and Southern Asia are, chiefly, monsoons; in the interior, they are local.

23. *Destructive cyclones* often visit the coast, frequently piling up the waters of the Bay of Bengal until the lowlands of the Ganges are submerged.

24. **Vegetation.**—Southern Asia is covered with a dense tropical vegetation. The palm, bamboo,* and ban'yan-tree are abundant. Rice, cotton, sugar-cane, flax, jute,* hemp, poppy,* and the spices, are the principal plants cultivated in the plains and valleys of Southern Asia.⁸

2. Central Hindoostan is often called the Plateau of the Deccan.

3. The Obi is the only river navigable to any considerable distance.

4. The Yang-tse and Hoang rivers are subject to great changes, brought about by the shifting of their channels. In 1851, the Hoang Ho burst through its banks and poured its waters into the Gulf of Pecheelee (pē chē lē'), and within two years, its lower course had so changed that the mouth of the river had shifted 250 miles from its former position. Kiang and Ho signify rivers.

5. The delta of the Ganges comprises a large area known as the Sunderbunds. The whole tract has been formed from the soil brought down by the current of the river. From recent surveys, it has been ascertained that the Sunderbunds are slowly sinking, and that their subsidence goes on about as rapidly as the elevation from the increasing deposits of sediment.

6. These deserts are rainless, not because the air contains no moisture, but because the winds pass over a region intensely heated, and, until they reach the high mountains, the air is not sufficiently cooled to permit the condensation of the moisture it contains.

7. The monsoons of India blow six months of the year from the land; the remaining part of the year, from the ocean. The latter are the rain winds.

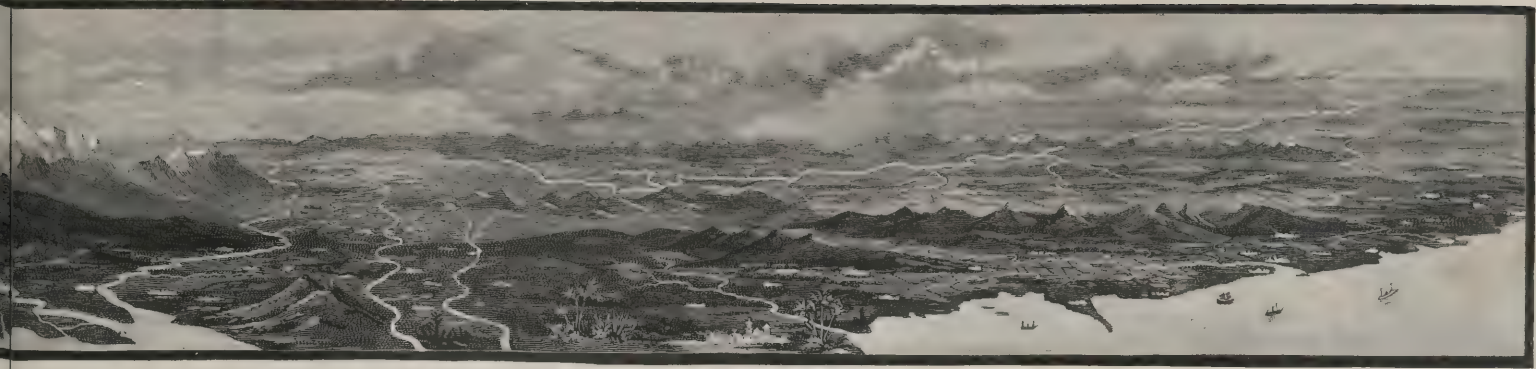
8. Most of the valuable food-plants are native to Asia, and have followed man in his migrations about the world.

* in ān' dāte, to overflow.

pōp' py, a plant from which opium is obtained.

bam bōō', a plant with round, hollow stems, applied to many useful purposes, as the manufacture of furniture, baskets, etc.

jute resembles hemp, and is used in the manufacture of mats, coarse carpets, etc.



OF BENGAL. BRAHMAPOOTRA RIVER. BURMAH,--IRRAWADDY RIVER. CAMBODIA RIVER, CHINA. YANG-TSE-KIANG. CANTON RIVER.

25. *Central Asia* produces the plants which thrive best in the temperate zones. Vast forests of pine, larch,* teak, maple, and birch are on the upland terraces of Siberia. The chief cultivated plants of Central, Eastern, and South-eastern Asia are wheat, tea, and rice.

26. *Western Asia* produces the famous Mocha (mō'ka) coffee, tobacco, the fig, date, and olive.

27. *Nearly all the domesticated animals* of the earth are found in Asia, and most of them are native to it. The Bactrian* camel and the elephant are used as beasts of burden. The Cashmere goat furnishes the fine wool known as camel's hair.

28. **Animals.**—Tropical, or Southern, Asia abounds in fierce animals and dangerous reptiles. The largest animals are the elephant, rhinoceros, tapir, lion, tiger, hyena, and jackal.* The reptiles include the crocodile, python, and cobra de capello. Monkeys and beautiful birds are numerous.

29. *In the colder regions*, the bear, wolf, fox, buffalo,* and several species of wild cattle are common. Here, also, are many kinds of deer.

30. **Minerals.**—Gold and plat'i num are widely diffused throughout the Ural Mountains and the central plateaus.

31. *Silver* is mined in Siberia. *Copper* and *iron* are abundant and widely distributed.

32. *Tin* is abundant in the Malay Peninsula and the Island of Banca, near Sumatra (sōō mā'trä).

33. *Petroleum* is found in the basin of the Caspian Sea.

34. Asia has always been famous for *precious stones*.

9. The strongest evidences of history, language, and science point to the highlands of Asia as the birthplace of man. Somewhere in the valleys of Persia, the old name of which was Arya (ār'ya), there lived a people who built houses, cultivated the soil, and had forms of government. They believed in the Omnipotent Being, and also in a spirit of evil.

10. *Near the Ar'yan race*, somewhere in the valley of the Euphrates and Tigris rivers, another race of people had risen. This people, now known as the Semit'ic race, had also reached a high state of civilization. The Aryan race colonized Europe; the Semitic remained in Asia. The Persians and the Hindoos are the descendants of the Aryan race who remained in Asia. In Europe, they separated into four branches. The Semitic race includes the Arabs, Syrians, and Jews.

11. *All other people of Asia* were called the "dark people" (Turanian). They include the Mongols and Malays.

12. *Siberia* has long been used by Russia as a place of exile for criminals. One or two per cent. of the exiles have been political offenders.

Most of the large and valuable diamonds, sapphires, rubies, and emeralds are from the mines of India.

35. *The finest pearls* are obtained in the Persian Gulf and in the water along the coasts of Ceylon.

36. **People.**—Asia is probably the birthplace of the human race.⁹ Fully one half the inhabitants of the earth live in China and India.

37. *The Chinese*, Japanese, Turks, and Tartars are of Mongolian descent.

38. *The inhabitants* of India, Persia, Turkestan, and Arabia are classed among the Caucasians.¹⁰

39. *The Malays* inhabit the Malay Peninsula.¹¹

40. *Siberia, Russian Turkestan, and Transcaucasia* are subject to Russia, whose capital is St. Petersburg.

41. *Siberia* may be divided into three belts; agricultural and grazing land, in the south; forests, in the middle; and frozen marshes, in the north.¹²

42. *Gold, silver, copper*, and other metals are mined in the mountains; and numerous wild animals are hunted for their furs.¹³

43. *Trade* is carried on by means of caravans and camel trains. In summer, boats navigate the rivers, and in winter, sledges are drawn on the ice and snow by dogs, horses, and reindeer.

44. *The chief cities* are Tiflis (tīf lēs'), in Transcaucasia, west of the Caspian Sea; Tashkend', in Russian Turkestan; Omsk (ōmsk), in Western Siberia; and Irkootsk (īr kōōtsk'), in Eastern Siberia. Yakootsk (yā kōōtsk'), on the Lena River, is said to be the coldest city in the world.¹⁴

13. **Fur-hunting in Siberia** is next to mining in importance. The animals hunted are the sable, ermine, elk, deer, bear, wolf, marten, beaver, and fox.

Fossil-ivory is found all over Northern Siberia, and in the islands north of it. This ivory is from the remains of mammoths,—huge animals which perished ages ago, when the tropical climate of Siberia was suddenly changed. Their dead bodies carried north by the rivers and floods, became imbedded in the soil, which froze and preserved them in ice. Ivory is, therefore, obtained from four sources:—the elephant, walrus, ivory-nut, and fossil mammoth.

14. *In Yakootsk*, the mercury falls in winter to 70° below zero. In the short, hot summers, potatoes, cabbage, and a few other vegetables grow. The gulfs and bays on the northern coast are frozen for nine months in the year.

* *Bact'ria*, a country of Asia, mentioned in ancient history. The Bactrian camel has two bunches on the back.

lārch, a cone-bearing tree.

bīy'fa w, a wild animal of the same genus as the ox. It is unlike the bison.

jāck'q, an animal resembling a wolf.

45. **The Chinese Empire** is larger by one half than the United States, and contains about six times as many inhabitants.

46. *China*, its most important division, contains the greater part of the population. The land is fertile and well cultivated, agriculture being the chief occupation of the people. Rivers and canals are numerous, and traveling is generally done in boats.¹

47. *The food* of the Chinese consists, principally, of rice and fish.²

48. *The leading exports* from China are tea, silk, porcelain, and pottery.³

49. *Its trade* is carried on, mainly, with Great Britain, Australia, and the United States, by means of ships; and with Russia, by means of caravans.

50. *Many of the inhabitants* of the other divisions of the empire are wandering tribes, whose occupation is the raising of horses, sheep, and goats.

51. *Pekin'*, the capital of the Chinese Empire, is noted for its surrounding walls, magnificent gates, and heathen temples.⁴ Its houses are only one or two stories high. Its population is greater than that of New York City.⁵

52. *Canton* (kǎn tǒn') is the second city in the empire.

53. **Thibet** (tib'et) is situated on a high plateau, surrounded by the highest mountains in the world.

54. **Corea** (kō rē'a) is a kingdom. It was, until recently, under the control of the Chinese government.

55. **The Empire of Japan** consists of islands, which contain mountains, streams, forests, and a well cultivated soil.⁶

56. *The principal occupations* of the Japanese are agriculture, manufacturing, and mining.

57. *Its exports* comprise tea, rice, silks, porcelain, fans, and lacquered (lǎk'erd) ware.⁷

1. **Thousands of the inhabitants of China** have their houses and gardens on rafts and boats, which float on the rivers. These people live by gardening and fishing. In their floating houses, their children are born, are married, and die. A young child, falling overboard there, is kept from drowning, by means of an empty gourd which its mother had tied between its shoulders.

2. **Besides rice and fish**, the food of many of the Chinese, who can afford it, comprises corn-cakes, meat, poultry, locusts, frogs, and oysters. Some of the poorer classes eat the flesh of the dog, cat, rat, and horse. All drink tea, but none use milk. The **Buddhists**, however, eat no meat. They do not kill any animal, for fear of disturbing the soul of a deceased relative or friend, which, they believe, may have migrated into it. The Buddhists believe in the transmigration* of souls.

3. **Other exports from China** are camphor, medicines, and fire-crackers. **Their imports** comprise cotton goods, kerosene, and opium. The opium is cultivated in India, and supplied to the Chinese by the English. Although opium-smoking ruins both body and mind, it is practiced by one fourth of the male population.

4. **Buddhist temples, or pagodas**, are generally octagonal,* built of bricks, and five, seven, nine, or other odd number of stories, in height. Their projecting, turned-up roofs are hung with bells. Some pagodas contain as many as 10,000 carved images of Buddha.

5. **The Chinese who have come to the United States**, are mostly of the ignorant class. They hope to return to their native land, partly on account of their reverence for the spirits of their ancestors; and partly because, when they are buried in the family grave-yard, they think their spirits may share in the offerings made there by their living relatives. At the beginning of winter, many of the people burn paper clothing over the graves of departed relatives, in the belief that, by means of the fire, the clothing may reach them. Food is also left at graves, for the dead, but it is usually eaten afterward by the living. **Chinese cities** are surrounded by walls. The streets in cities of the south are narrow, to keep out the

58. *Tokio* (tō'kē o), the capital, is the residence of the emperor, called the mikado (mi kǎ'do). Its chief port is Yokohama (yō kō hǎ'mǎ).

59. **India** is larger than all the Pacific States and Territories, and contains about four times as many inhabitants as the United States.

60. *Nearly the whole of India* is subject to Great Britain, either absolutely, or as tributary states.⁸

61. *India* is remarkable for its high, snow-covered peaks, hot climate, and large population.

62. *Its low plains* in the north are the most fertile in the world. The west and south contain desert tracts.

63. *The people*, generally, are engaged in agriculture and stock-raising.

64. *The principal exports* are cotton, opium, rice, wheat, and jute. Cattle, camels, buffaloes, sheep, and goats are numerous. The inhabitants subsist, principally, upon rice, fish, and tea.⁹

65. *Calcutta* is the capital and largest city in India, and the most important commercial city in Asia.

66. *Bombay* (bōm bā'), on the western coast, and *Madras* (ma drās'), on the eastern, are important cities.

67. **Ceylon** (sē lōn') is a mountainous island, belonging to Great Britain. It is famous for coffee and spices.* Pearl oysters abound on the southern coast, and the fishery is often very profitable.

68. **Farther India, or Indo-China**, forming the south-eastern peninsula of Asia, comprises the kingdoms of Burmah, Siam' and A nam', Lower, or French, Co'chin China, Cam bo'dia, and the Malay Peninsula.

69. *This division* of Asia is remarkable for its long mountain ranges and fertile valleys, its hot, moist climate, and its dense forests and jungles.

heat of the sun. There are no wheeled vehicles. Travel is by means of boats, carts, sedan-chairs, and wheelbarrows. In the north, the streets are wider, admitting of carriages, etc. The **clothing** of men, women, and children is long and loose. The **feet of Chinese women** of the upper classes are small and deformed. The feet are bandaged tightly to stop their growth, when the child is about five years of age.

6. **Japan contains** beautiful lakes, rivers, water-falls, trees, and flowers of great variety; bears, deer, wolves, and foxes; pheasants and other beautiful birds. The **celebrated mountain** in Japan is Fujiyama (*fūjō ō' mō*), whose summit is covered with snow nearly all the year. In summer, bands of pilgrims, dressed in white, travel to its summit, to worship idols there.

7. **Japanese houses** are furnished with mats, on which the people both sit and sleep, using neither chairs nor bedsteads. Although rice, fish, and tea are their chief kinds of food, the Japanese have also sweet potatoes and other vegetables; oranges, figs, grapes, pears, and other fruits; also, chickens and eggs. Like the Chinese, they eat with chopsticks, instead of knives and forks. The Japanese are well skilled in agriculture, ivory carving, and the manufacture of porcelain and bronze ornaments. Grain and vegetables of the temperate zone are raised there.

8. **The parts of India** which are under British control, occupy two thirds of its area. The states which are independent are Nepaul and Boo tan'. The **Malay Peninsula** includes the independent Malacca States and the British Straits' settlements.

9. **The north-east monsoons** are winds which, for six months, cause drought (drowt) and oppressive heat. These are followed by the **south-west monsoons**, which are rain-bearing winds. Suddenly the dry, parched, and deserted land is covered with dense vegetation, and teems with animal life. Countless fishes, which for months have lain torpid, are recalled to activity.

* *oc tag' ō nal*, having eight sides.

spices, cinnamon, ginger, pepper, nutmegs, cloves, etc.

trāns mī grā' tion, passing of the soul into another body.

70. *It contains* large, savage animals, and many tribes of people scarcely removed from barbarism.

71. *The chief occupation* of the inhabitants is the cultivation of rice, which is their principal article of food.¹⁰

72. *Bangkok'*, the capital of Siam, is the largest city in Farther India. It contains royal palaces and many pagodas. These are surrounded by bamboo houses built on piles.

73. *Man'da lay* is the capital of Burmah.

74. *Saigon* (sī gōn') is a sea-port of French Cochin China.

75. *Singapore* (sīn gā pōr'), on the Island of Singapore is a sea-port, belonging to Great Britain.

76. *Persia, Afghan is tan', Bel oo chis tan', and Bokhara* (bōk ā'rā) are remarkable for their desert tracts, forest-covered mountains, and fertile river valleys.

77. *The productions* include grain, fruits, sugar, indigo, and dates.

78. *Many of the inhabitants* own large flocks of goats and sheep; while others are engaged in the manufacture of silk goods, shawls, rugs, and perfumery, or in the caravan trade. There are, also, many roving, warlike tribes. Nearly all are Mohammedans.¹¹

79. *These countries* are important because of their situation between Russia and the Indian Ocean. Afghanistan has been called the "gateway to India."

80. *Teheran* (teh rān'), the capital of Persia, and Tabriz (tā breez'), are the chief cities.

81. *Cabul* (kā bōl'), Herat (her āt'), and Candahar (kān dā hār') are the principal cities in Afghanistan.

82. *Arabia* is chiefly a hot, desert plateau, with oases of different sizes, in which dates, grapes, tamarinds, and other fruits grow.

83. *It has no general government*, the inhabitants being ruled by sheiks (sheeks), or chiefs. The rulers of Oman' and Nejed (nějd), or Nedjed (něd'jēd), are called Sultans.

10. *Other products of Farther India* are corn, wheat, sugar-cane, tobacco, cotton, and indigo. In the forests, are the elephant, rhinoceros, tiger, and leopard. White elephants receive great honor in Siam.

11. *Persia* is remarkable for extensive salt deserts. Near the Caspian Sea, however, vegetation is luxuriant. Here, as in other Mohammedan countries, education is confined to learning portions of the Koran, and scraps of poetry. The Persians are a slow, easy-going people, hospitable, generous, but procrastinating.*

12. *Historical Notes.*—China is sometimes referred to as Cathay (*kath ā'*), the Middle Kingdom, the Flowery Land, and the Celestial Empire. Its records extend back to the time of the Patriarch Abraham, about 2000 B.C.

13. *The Great Wall*, over 1,200 miles in length, was built about 200 B.C., to keep out the Tartars, who were enemies of the Chinese.

14. *The shaving of men's heads*, in China, and the wearing of the queue (*kū*), as evidence of submission to the throne, began in the 17th century A.D. Among all classes, great importance is attached to the possession of the queue.

15. *Formerly*, the Chinese and Japanese refused Americans, English, and other foreigners admission to their countries; but now, they trade freely with them, and permit them to reside in certain places. The *Emperor of China* appoints his successor from the members of his family.

16. *The Island of Hong Kong* was ceded by China to Great Britain, in 1841.

17. *Commodore Perry* visited Japan, and made a treaty between that government and the United States, in 1853. Since that time, the Japanese have made rapid progress in civilization and learning.

84. *Arabia is celebrated* for fine dromedaries* and horses, and excellent coffee.

85. *Mus cat'*, the capital of Oman, is the largest city in Arabia, and the chief sea-port.

86. *Aden* (ā'den) is a fortified sea-port, belonging to Great Britain.

87. *Mecca*, the birthplace of Mohammed, is visited by many Mohammedan pilgrims every year. It is said to be the hottest city in the world.

88. *Turkey in Asia* is a part of the Ottoman, or Turkish, Empire, whose capital is Constantinople.

89. *Its northern part* is remarkable for forests, mountains, and fertile valleys; its eastern part, for the fertile plains of the Tigris and Euphrates (ū frā'tēz); and its southern, for a desert region.

90. *Tropical fruits*, cotton, grain, and tobacco grow abundantly.

91. *The people* are chiefly Turks and Arabs (ār'abs), professing the Mohammedan-religion.

92. *Smyrna*, an important commercial port and steamer station, is the largest city.

93. *Damascus* is the oldest city in the world. It contains grand old mosques (mōsk), and is the center of the caravan trade. Its manufactures comprise saddles and silk goods.

94. *Palestine* (pāl'es tīn), or the Holy Land, is mentioned in Scripture, as the Promised Land of the Ancient Hebrews, and the birthplace of Christianity. It contains the cities of Jerusalem and Beth'lehem, the Valley of the Jordan (jōr'dan), the Dead Sea, and the Sea of Gal'ilee.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about one or more of the countries of Asia, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on one or more of the countries of Asia, as shown on page 32.

18. *Japanese pupils* now sit at desks, instead of on the floor of the school-room, as formerly. In the principal cities in Japan, the people have adopted the style of dress worn in the United States and Europe.

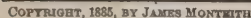
19. *The Japanese* claim that their empire was founded in the year 660 B.C., and that the present emperor is in the direct line of descent from the first rulers. The crown usually descends to the eldest son.

20. *The Empire of India* is ruled by the Governor-General, who is appointed by Victoria, Queen of Great Britain and Ireland, and Empress of India. Next to the Chinese Empire, it is the most populous in the world. *India was settled by the Ar'yans*, about 1400 B.C. They were Brahmans, but unlike the Brahmans of the present time, in their religious teaching and practices. Their language was the San'skrit. *The people are divided into castes*. They believe in the transmigration of souls. *Gautama, or Buddha*, about 500 B.C., introduced a form of religion, which, after a long struggle with Brahmanism, was overcome, in India, and transplanted in China, where it has degenerated into a debasing form of idolatry. *Queen Elizabeth* chartered the East India Company in 1600 A.D. The vast empire, which had grown by its conquests, was transferred to the British Crown, in 1858.

21. *The siege of Calcutta*, in 1756, was rendered memorable by the "Horror of the Black Hole." In 1842, an English army, with many notable men and women, perished in the massacre of Cabul. During the *Sepoy mutiny* of 1857, occurred the terrible massacre of Cawn poor', and the subsequent relief of Lucknow.

* *drom'e da ry*, a camel which has but one hump on its back. The Bactrian camel has two humps. *pro crūs' ā nūte*, to put off till to-morrow.

A 10:40 A.M. B C NOON AT LONDON D E 1:20 P.M. F G 2:40 P.M. H I 4 P.M.





AFRICA.

Location.—In what direction is Africa from Europe?—from the United States? What separates Africa from Europe? In what zones is Africa? What does the Suez Canal connect?

Latitude and Longitude.—What part of Africa is crossed by the Equator?—the Tropic of Cancer?—the Tropic of Capricorn? In what place is a vessel, whose reckoning is latitude 20° north, and longitude 40° east?—latitude 0°, longitude 0°?

Outline.—What two oceans partly bound Africa?—two seas?—two large gulfs?—two straits? What do these straits connect?—separate? What gulfs on the northern coast? What is the northern cape of Africa?—the southern?—the eastern?—the western? Where is the Cape of Good Hope?—Cape Lopez?—Cape Amber?

Islands.—Where is Madagascar? By what waters is it surrounded? What islands north-west of Africa? Where is St. Helena (*he tē' na*)?

Mountains.—What mountains in the northern part?—eastern?—western?—southern? Mention the two highest peaks.

Lakes and Rivers.—Mention the large lakes. Which is farthest north?—south? Which is crossed by the Equator? In what direction and into what water does the Nile River flow?—the Congo, or Livingstone?—the Ni'ger?—the Zambeze (*zām bī' ze*)?—the Orange River?

Countries.—What countries border on the Mediterranean Sea?—on the Red Sea? Where is Senegambia?—Liberia?—Congo Free State?

Climate and Products.—What isotherm crosses the northern part of Africa?—the central?—the southern? Mention the products of the Mediterranean States,—of the South African Colonies,—of the Guinea Coast,—of Central Africa,—of the Nile Valley,—of Madagascar.

Map Drawing.—To draw a map of Africa, construct an oblong diagram eleven and three fourths measures, from east to west, by twelve and one half measures, from north to south, and on its sides, mark the four principal capes. Draw the northern, eastern, southern, and western coast lines.



ATLANTIC OCEAN,—CONGO RIVER. LIVINGSTONE FALLS,—LAKE TCHAD.

CONGO RIVER,—LAKE LINCOLN.

CENTRAL AFRICA.

LAKE BANGWELO,—LAKE TANGA

AFRICA.

1. **Position.**—Africa, the south-western continent of the Old World, is the only grand division stretching entirely across the Torrid Zone.

2. *It is a peninsula*, joined to Asia by the Isthmus of Suez. The ship-canal, constructed across the isthmus, makes it, artificially, an island.¹

3. **Size and Outline.**—Africa is the second, in size, of the grand divisions. Its length and breadth are each about 5,000 miles.

4. *The coast* is unbroken by bays and inlets such as make secure harbors for vessels. In proportion to its size, it has a shorter coast-line than any other grand division.

5. **Islands.**—There are many continental islands lying along the coast of Africa. Madagascar, the largest, is separated from the continent by a very shallow channel.

6. **Surface.**—The interior of Africa is a plateau, which is highest in the south and south-east. This, in most parts, is bordered by mountains, between which and the sea is a low and narrow strip of coast.

7. *The average elevation* of the high plateau is about 5,000 feet; and of the northern region, about 1,500 feet.

8. *The principal mountain system* extends along the eastern side of the continent. Mount Kenia (ke ni'a), the highest peak, is about 20,000 feet above the level of the sea.

9. *The Atlas Mountains*, near the northern border, are high and rugged.

10. *The Kong and Cameroons Mountains* are near the western border.

11. *The Peak of Teneriffe* (tën er'if'), one of the Canary Islands, is more than 12,000 feet above the level of the sea.

1. The shortest distance across the Isthmus of Suez is about seventy-two miles; the line of the canal is one hundred miles. The average height of the isthmus above sea-level is scarcely ten feet.

The Suez Canal was completed in 1869. It has a depth of twenty-four feet, and a clear channel seventy-two feet in width. By connecting the Red Sea with

12. **The Great Desert** has an undulating surface, and is covered mostly with shifting sand and gravel. A small portion, south of Barca, is below the sea-level.²

13. *Oases*, watered by springs and covered with groves of date-palm-trees, are met with in different parts of the desert.

14. **Soudan** (sōō dān'), situated south of the Great Desert, is a region remarkable for its extreme heat, and excessive rains and droughts.

15. **Central Africa**, or the region crossed by the Equator, is remarkable for its fertility; and, owing to its great height above the sea-level, its climate is mild and healthful. This region is drained by many large rivers.

16. **Southern Africa** is mountainous; but it contains many fertile valleys and plains, well adapted to agriculture and stock-raising. The Kalahari (kā lā hā' rē) Desert, though destitute of streams, is covered, during a great part of the year, with grass.

17. **Lakes.**—The lakes of Africa are confined chiefly to the high, equatorial region, and are remarkable for their number and size.

18. *Lake Victoria* is the largest lake in the world. Its outlet is the Nile River.

19. **Rivers.**—The Nile flows through the most important part of Africa. Its lower course is in a region almost rainless; and for more than 1,500 miles, it does not receive a single tributary. It is fed by the annual rains, and the melting snows of the high mountains.

20. *The water of the Nile* is highest from May till September, when the lower valley is covered with a fine, rich soil, brought down by the flood; and the seeds which are scattered over the water, as it subsides, bring forth abundant crops of grain. Cotton, also, is an important product of the Nile Valley.

the Mediterranean, this canal furnishes a shorter route between European ports and India, than that around the Cape of Good Hope. It extends from Port Said (sā' sād'), on the Mediterranean, to Suez, a sea-port town near the head of the Gulf of Suez.

2. This is the tract which it is proposed to flood with water from the Mediterranean Sea, and thus form a new lake.



AFRICA.

LAKE VICTORIA,—LAKE ALBERT,—NILE RIVER.

MT. KILIMA-NJARO.

MT. KENIA.

INDIAN OCEAN,—ZANZIBAR ISLAND.

21. *The Congo*, first explored by Livingstone, and afterward by Stanley, drains the most fertile part of the continent. Its source is in the region of heavy rains.

22. **Climate.**—The region of greatest heat is in the Egyptian Soudan. There the midday temperature during the summer months is often 140° Fahr., while the nights are sometimes so cold that ice forms.

23. *In the desert*, hot winds, known as simooms, are prevalent, and sand storms are often destructive.

24. *The coast*, generally, is very unhealthy.

25. **Southern Africa** possesses a mild and genial climate. Here are the principal settlements formed by Europeans, in Africa. This is the home of the Caffre (kā'fēr.)

26. **Vegetation.**—Northern Africa yields grain, cotton, dates, almonds, and olive-oil.

27. *Rice is a leading product* of the Guinea (gīn'ē) Coast.

28. *The date-palm* flourishes along the shores of the Mediterranean and in the oases of the desert.

29. *The famous baobab-tree* (bā'ō bab) is found in Central Africa. It is famous for its great size and age.³

30. *Groves of teak*, mangrove, ebony, and India rubber abound on the western coast.

31. *Gum arabic* (ār'ā bīk), myrrh, cotton, coffee, sugarcane, and spices are products of Eastern Africa.

32. *The islands* produce tropical fruits, wine, and amber.*

33. **Animals.**—Africa is noted for large and ferocious animals, and venomous serpents.

34. *The lion* may be found in any part of the continent.

35. *The hippopotamus* inhabits the upper Nile, while the marshes and streams of the low coast contain many crocodiles, lizards, and other reptiles.

3. **The baobab-tree**, one of the giants of the vegetable kingdom, grows to the height of about forty feet. Its trunk is from twenty to thirty feet, in diameter. Its fiber is used in making paper, cordage, etc. Millions of these trees are found south of the Congo River. Some of them are, it is said, more than 4,000 years old.

4. **For more than four thousand years**, camels have been almost the sole means employed to carry merchandise across the deserts. The camel will carry a

36. *The gorilla* (gō rī'lā), the largest and fiercest of apes, and the chim pan'zee, are met with in the west.

37. *The elephant*, giraffe, and the two-horned rhinoceros, belong in Central and Southern Africa.

38. *There are many* species of deer and antelope.

39. *The zebra* and the gnu (nū), or horned horse, are numerous in the grassy plains of Southern Africa.

40. *The ostrich* (ōs'trich) is hunted in various parts of the continent; but in Southern Africa, the rearing of these birds for their plumes, is an important occupation.

41. *The sacred ibis*,* parrots, and other birds of beautiful plumage, are found in various parts of Africa.

42. *The most useful animal* in crossing desert regions is the camel. Travelers and merchants, with their camels carrying merchandise, cross the desert in companies, called caravans.⁴

43. **Minerals.**—The coasts of Guinea and Senegamb'ia have long been celebrated for gold. Copper, lead, salt, and saltpeter are obtained in some places.

44. *Important diamond fields* are in South Africa.

45. **People.**—Africans comprise three races—the Caucasian, Negro, and Malay.

46. *The Moors, Arabs, Berbers, Egyptians*, and various tribes of the north are Caucasians; the tribes of Central and Southern Africa, and the east and west coasts, Negroes; and those of Madagascar, Malays.

47. *Excepting the European colonists* who have settled along the coast, nearly all the Caucasian inhabitants are Mohammedans, and are in a low state of civilization.

48. *Most of the Negro tribes* of Africa are savages, in a degraded condition. There are, however, several tribes which cultivate the soil, raise cattle, and observe laws.

load of four or five hundred pounds weight, fifty miles a day, for five or six days, although he may not be supplied with food or water, during that time. Vast herds of cattle and flocks of sheep are raised in Southern Africa.

* *āmb'er*, a yellowish res'in, found as a fossil in alluvial soils, or on the sea-shore, in many places. It takes a fine polish, and is made into ornaments. [tail black. *V'bis*, a tall, slender bird having white plumage, with the tips of the wings and

49. **The Barbary States**, situated on the Mediterranean Coast, extend from the Atlantic Ocean to Egypt.

50. *The Atlas Mountains* extend partly through this division. These, with a low range along the Mediterranean Sea, inclose a number of large and fertile valleys.

51. *The climate* is mild and healthful. South of the Atlas Mountains, it is extremely hot and arid. There are two seasons, a rainy and a dry.

52. *The highlands* are covered with forests of cedar, pine, cork-trees, and other valuable timber.

53. *The lowlands* are finely adapted to agriculture.

54. *The most important productions* are dates, oranges, bananas, pomegranates (pūm grān'ēts), and figs.

55. *The natives* consist of Moors, Arabs, and Berbers. Although descended from a very enlightened people, they are extremely ignorant, degraded, and treacherous.

56. *The foreigners* are mainly French and Jewish colonists. Wherever they settled, agriculture, manufactures, and commerce quickly followed.

57. **Morocco** (mōrōk'ō) is under the absolute government of a sultan, who is subject to Turkey. The country is sparsely settled. Cattle, sheep, and goats are reared extensively.

58. *In tanning and dyeing leather*, the people exhibit great skill, and the leather manufactured there is exported to all parts of the world.

59. *Morocco and Fez* are the most important cities. The sultan holds court at one and the other, alternately.

60. **Algeria** (āl jē'riā) is a French possession, and contains a large European population. It is one of the most prosperous of the Barbary States.

61. *Several lines of railway* are in operation, and caravans, trading in ivory, gums, and ostrich feathers, penetrate the interior of Soudan.

62. **Algiers** is the capital and commercial center. It is connected with Marseilles by a submarine telegraph cable.

63. **Tunis**, also, is a French possession. It was formerly subject to Turkey. It is noted for its olive groves, date plantations, coral fisheries, and the manufacture of red caps, soap, and leather.

64. *Tunis*, near the site of ancient Carthage, is the capital and sea-port. It is a very old city.

65. **Tripoli** (trīp'ōlī), though nominally a Turkish province, is a despotic monarchy, governed by a bey.* It includes the Oasis of Fezzan.

66. *It contains no rivers*, and rain seldom falls; yet, on account of heavy dews, the soil is productive.

67. *The leading exports* are wool, hides, and ivory.

68. **Tripoli** is the capital and sea-port. *Mourzouk* (mōr zōōk'), the capital of Fezzan, is the center of a large caravan trade.

69. **The Nile Countries** comprise Egypt proper, Nubia, and the Egyptian Soudan, or Kingdom of the Mahdi (mā' dē). They are governed by a hereditary monarch called the khedive,* and are subject to Turkey.

70. *The greater part* of Egypt is a desert. Along the lower course of the Nile, only the narrow valley, which is annually inundated, is capable of producing crops.

71. *Since the completion of the Suez Canal*, rapid progress has been made in developing the agricultural and commercial interests of Egypt.¹

72. *Railways* have been built, and, by means of irrigating canals, extensive tracts of desert land have been made productive.

73. *Most of the wealthier classes* have been educated in Europe, and foreign customs are being introduced throughout the country. The fellahin (fel' lā īn),² or laboring classes, are greatly oppressed, and are practically in a state of slavery. The Arab inhabitants are Mohammedans; the Copts,³ Christians.

74. *The principal products* of Egypt are cotton, grain, sugar, and rice. Gum arabic, ivory, indigo, and ostrich feathers are obtained in the Soudan. Manufactories have been established in the larger cities and towns.

75. **Cairo** (kī'rō), the capital of Egypt, is the largest city in Africa. *Alexandria* is the principal sea-port. Railways connect both cities with Suez, the southern sea-port of the Suez Canal. The northern, or Mediterranean, sea-port of the canal is Port Said.

76. *The other sea-ports of Egypt* are Ro set'ta and Damietta (dām i ē'ta).

77. **Nubia** (nū' bā ī) and the **Egyptian Soudan**⁴ are inhabited by warlike tribes of Arab and Negro descent.

78. **Khartoom** (kār tōōm'), at the junction of the Blue and the White Nile, is the center of a large caravan trade.

1. **The commercial importance of Egypt** is due, partly to the fact that the Suez Canal is situated in Egyptian territory, and partly, to the heavy indebtedness of the Egyptian government to English and French capitalists. In order to secure these from loss, the financial management of Egyptian affairs has been assumed by agents of the British government.

2. **From the remotest times in the history of Egypt**, the lot of the fellahin has been a hard one, and it has been the common custom for the ruler of Egypt to collect them in gangs and compel them to labor on the public works. For this work, not only do they receive no pay, but they are also required to provide their own food, in the meantime. The conscription of fellahin to-day differs in no wise from that practiced under the task-masters 4,000 years ago. In order to escape this conscription, villages and towns are often entirely abandoned, the people fleeing in all directions, on the approach of the overseers.

3. **The Copts** are the descendants of the ancient Egyptians.

4. **The Egyptian Soudan** was recently annexed by Ismail Pacha (īs mī' ū' pashā'), who was, at that time, Khedive of Egypt. The annexation was resisted by the native tribes of the Soudan, and especially by the slave-dealers. For a long time, Egyptian rule was upheld by British bayonets. Finally, Mohammed Achmet, a man renowned for learning and religious zeal, proclaimed himself Al Mahdi, or the Prophet. The fellahin quickly gathered to his standard, and every army sent to subdue him was annihilated. Recognizing the impossibility of holding the Soudan, the British government sent General Gordon to rescue the English subjects who were then in that region. Gordon and these people were finally surrounded at Khartoom and massacred, it is said, by order of the Mahdi.

* *bey* (bā), governor of a town, or district, in the Turkish dominions.

khē dīve', king, viceroy, or governor of Egypt. *pasha*, a governor, or commander.

79. **Abyssinia** (äb'is sī'Yā) is a high and rugged plateau, containing a number of fertile valleys. The climate, owing to the high altitude of the surface, is mild and healthful. The people, though of a dark, or swarthy, complexion, belong to the Caucasian race, and consist, chiefly, of Copts and Berbers, who are ignorant and degraded.

80. *Abyssinia* consists of several independent states, having no general government.

81. *Gon'dar* is the capital. *Mas su'ah*, or *Massowah*, an Egyptian possession, is the only sea-port.

82. **South Africa** comprises several prosperous colonies. Some of these belong to Great Britain; others are independent states founded by Dutch settlers: while others, still, are the homes of native tribes.

83. **Cape Colony** and **Natal** (nä'täl') are British colonies. The surface of the land is high, undulating, and well adapted to grazing.

84. *The leading occupations* are the raising of cattle and sheep, and the rearing of ostriches. Wool and ostrich feathers are among the most valuable exports.

85. *Cape Town*, the capital of Cape Colony, is the chief sea-port of South Africa.

86. *Pietermaritzburg* (pē ter mār' its burg) is the capital of Natal.

87. **West Griqualand** (grē'kwä), also a possession of Great Britain, contains the most productive diamond mines in the world.

88. *Kimberly*, its capital, is situated in the diamond fields, and is the chief market for rough diamonds.⁵

89. **Caf fra'ri a** and **Zu'lu land** are inhabited by natives who are noted for their intelligence, fine physical appearance, and great bravery.⁶ Both countries are governed by native chiefs, although subject to Great Britain.

90. **The Orange Free State** and the **South African Republic** (formerly *Trans vaal'*), are inhabited by Dutch farmers, called Bo'ers. The Boers are noted for their bravery and love of independence.⁷

91. *Bloemfontein* (blōm fōn'tin) is the capital of the Orange Free State, and *Pre to'ria*, of the South African Republic. Wool, cattle, and grain are the exports.

92. **Central Africa** includes the regions comprised in Sahara, or the Great Desert, Soudan, the Congo Free State, and the territory southward to the Boer republics.⁸

93. **Sahara** contains about twenty oases, inhabited by

wandering tribes, who live, chiefly, by plundering the caravans.

94. **Soudan** is inhabited by semi-barbarous tribes, each of which is governed by a chief, whose will is law.

95. *Their occupation* is herding cattle, but they are constantly at war with one another.

96. *Tim buc' too*, *Sack a too'* and *Kouka* (koo'kä), are centers of a large caravan trade.⁹

97. **The Congo Free State** embraces the basin of the Congo River. It is subject to the King of Belgium.

98. **Zan'zi bar** is a strip of coast nearly 1,000 miles long, including a number of small islands. It is an absolute monarchy, governed by a sultan.

99. *Zanzibar*, on an island of the same name, is the capital. It is the center of a large trade in ivory, gum co'pal, and spices. Trade is almost exclusively in the hands of Hindoo and Arab merchants.

100. **Mozambique** (mō zam bēk') includes a number of Portuguese colonies, extending from Zululand to Zanzibar. The city of Mozambique, the chief center of trade, is the residence of the Governor-General.

101. **The West Coast** is covered with forests of valuable timber. The highlands contain gold and silver.

102. **Senegambia** (sēn e gām' bī ä) includes most of the basins of the Senegal (sēn ē gāl') and Gambia rivers. English and French traders have settled along the coast.

103. **Sierra Leone** (sī ēr'ra lē ō'ne) is a prosperous English colony. It is inhabited by Negroes, many of whom were rescued from slave-ships. *Freetown* is the capital.¹⁰

104. **Liberia** is a small republic, originally established as a colony for freed slaves from the United States. *Mon ro'vi a* is the capital.¹¹

105. **Dahomey** and **A shan'tee** are absolute despotisms.¹²

106. **Madagascar**, a kingdom, contains a civilized population, whose principal industries are agriculture and herding.

107. **St. Helena** belongs to Great Britain; the **Canary Islands**, to Spain; the **Madeira** (mä dē'rá), the **Azores** (a zōrz'), and the **Cape Verd Islands**, to Portugal.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about Africa, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a written exercise on Africa, as shown on page 32.

5. **Rough diamonds** are those which have not been cut and polished. They are irregular in shape, and unattractive in appearance. The cutting and polishing of the stone, upon which its beauty and much of its value depend, is done, chiefly, at Amsterdam and Antwerp.

6. **The finest specimens of the Negro race** are the Caffres.

7. **The Boers** were the first settlers of Cape Colony. After the colony had been annexed to Great Britain, the Boers moved to Natal; and, on the annexation of Natal to Transvaal (*trāns vāl'*), an attempt to annex the latter led to a war between the Boers and Great Britain. The Boers were successful, and gained their independence, agreeing, however, to make no treaties with foreign nations without the consent of Great Britain.

8. **The Kalahari Desert**, the region surrounding Lake N'gami (*ngā'me*) and the

upper basin of the Zambesi (*zīm bē'ze*), are claimed both by the Germans and the Boers. The natives are regarded as the lowest types of humanity.

9. **The principal routes** by which caravans cross the Great Desert are from Morocco, Fez, Tunis, and Tripoli, to Timbuctoo, Sackatoo, Kouka, and Mourzouk.

10. **Sierra Leone** was founded through the efforts of English philanthropists, as a colony for Negroes who had been recaptured from slave-traders.

11. **Liberia** was founded in 1816. Monrovia, its capital, received its name from James Monroe, who was then President of the United States.

12. **The natives** are superstitious, warlike, and ferocious. In Dahomey (*dai hō'ma*), wholesale murders, or human sacrifices, form part of certain celebrations. Here, the king has an army of women whose weapons are muskets, swords, and clubs. Ashantee, also, is ruled by a native king, who is independent.

COMPARATIVE TIME WHEN NOON AT LONDON.



GENERAL QUESTIONS.

Location.—In what ocean is Oceania (*ô she ô' nã a*)? Between what other grand divisions is it? (See *commercial map, page 132.*) Which division of Oceania is situated in the Eastern Hemisphere? (The 160th meridian east from Greenwich, and the twentieth west, separate the two hemispheres.) What ocean south-west? What ocean south? In what direction is Australia (*aus trã' ð a*) from California?—from England?—from Japan?

Latitude and Longitude.—What large islands are crossed by the Equator? What continent is crossed by the Tropic of Capricorn? What division is situated wholly in north latitude? What divisions are wholly within the Torrid Zone? Mention two or more large islands in the South Temperate Zone,—five or more in the Torrid Zone. Which are in Malaysia (*ma lã' shã a*)?—in Melanesia (*mẽl ăn' shã a*)?

When it is noon at Greenwich, about what time is it in the Fee'jee Islands? What is the longitude of those islands?

Outline.—Which has the greater extent of coast—Europe, or Australia?—Celebes (*sẽl e bẽs'*), or Java (*jã' vã*)? What strait separates Australia from Papua (*pãp' ð a*), or New Guinea?—Sumatra (*sũ mũ' trã*) from Java?—from the Malay (*mã lay'*) Peninsula?—Borneo from Celebes? What sea between Malaysia and Asia?—between Java and Borneo?—between Australia and New Zealand?—between Australia and New Guinea?—between Borneo and the Philippine (*fil' ip in*) Islands? What sea north-east of Australia?

What gulf indents the northern coast of Australia?

What bay (or bight) indents the southern coast? What reef north-east? What is the northern cape of Australia?—the western?—the northern cape of New Zealand? Which is the larger—Tasmania, or The Netherlands?—(See *comparative areas.*)—the Feejee Islands, or The Netherlands?—Java, or Kansas?—New Zealand, or Kansas?

Surface.—How does the surface of Australia compare with that of the other islands of Oceania? Which islands contain the highest mountains? (See *profile.*) What is the highest peak in Sumatra?—in Borneo?—in Java?—in New Zealand? What is their elevation? What mountains near the center of Australia?—near the eastern coast? Mention three rivers of Australia,—two lakes. In what part of that continent are its deserts?

Islands and Colonies.—Mention the groups of Malaysia. Which is the largest island of Malaysia? Mention four of the Sunda Islands. Mention three groups of Melanesia,—three of Micronesia (*mĩ krõ nẽ' shã a*),—three of Polynesia. What groups north-east of the Feejee Islands?—south-east?

Mention the colonies of Australia. Which is farthest south-east?—west?—north-east? What colony between Victoria and Queensland?—between New South Wales and Western Australia? What is the capital of Victoria?—of New South Wales?—of Queensland?—of South Australia?—of Western Australia?—of Tasmania?—of New Zealand?

Climate.—What is the mean annual temperature along the thermal Equator, or line of greatest heat? Does the greater part of that isotherm lie north, or south, of the geographical Equator? How does the climate of this division

compare with that of Peru? To what is this difference in climate due? When it is winter in New Zealand, what is the season in the United States? (See *page 9, diagram 1.*) Which has the hotter climate—New Zealand, or New Guinea? What is the mean annual temperature of the northern part of Borneo?—of the south-eastern part of Australia?

Products.—What vegetable products have Australia, New Zealand, and Tasmania? What animal products? What minerals? What are raised in all, or nearly all, the islands of Oceania? Of what islands are rice, cotton, and sugar, the staple products? Where are hides, wool, and tallow obtained? Where are diamonds found?—pearls? Where is sandal-wood obtained?—coal?—ivory?—camphor?—hemp?—sulphur?—coffee?—sago? Are the products of Australasia those of a hot, or of a temperate, climate? What are the chief products of the islands of Polynesia? In which islands are most of the spices produced? What are the principal products of the Sandwich Islands?

Commerce.—Mention three sea-ports in the south-eastern part of Australia. The capital of Java is the metropolis of the Dutch possessions,—mention it. What is the capital and leading sea-port of the Philippine Islands? Mention a sea-port in Sumatra,—two in New Zealand. What sea-port is the capital of the Sandwich Islands?

In what general directions do the currents east of Australia flow?—south of Australia?—west?—north of New Guinea?—south of Java and Sumatra?—near the Feejee Islands? In what direction does the current flow between New Guinea and the Feejee Islands?—between Tasmania and New Zealand?—south of Sumatra?—in the China Sea?

1. **Position.**—This grand division consists of Malaysia, Australasia, Melanesia, Micronesia, and Polynesia, with their subdivisions.

2. **Malaysia and Australasia** comprise a number of large islands, extending south-east from Asia. They are continental islands, or partly submerged mountain chains.

3. *One of these chains extends* northward to Kamchatka. The other, which includes the islands of Sumatra and Java, stretches eastwardly to New Zealand.

4. *The sea* in the vicinity of these islands is, in most places, shallow.

5. **Polynesia** consists of a number of groups scattered over the greater part of the South Pacific Ocean.

6. *The islands constituting these groups* are of volcanic origin. In structure, however, they

are reefs of coral, elevated but a few feet above the sea-level.

7. *The shape* of most of them is that of an irregular ring, or atoll, broken in one or more places, and inclosing a shallow lagoon. (See *page 11, note 3.*)

8. *The water within the lagoon* is never more than a few fathoms deep, while outside the reef, the bottom slopes abruptly to a depth of ten or twelve thousand feet.

9. *The coral reef* that forms the atoll began its growth along the shore of the mountain, which gradually sunk until it disappeared. The coral polyp, in the meantime, continued to build upward, always keeping at, or a little above, the surface.

10. *Waves beat* against the reef, breaking off fragments and tossing them above the water-

line. In the course of time, waves and migrating birds brought seeds from other lands, and the islands were, finally, covered with vegetation.

11. **Surface.**—The surface of the continental islands is mountainous. Malaysia is the chief center of volcanic activity in the world.

12. *The highest peaks* are in Sumatra and Java, several of them exceeding 13,000 feet in height. Nearly every high peak in this grand division is volcanic.

13. **Soil.**—The soil of the large, or continental, islands is composed of volcanic matter, pulverized and mixed with decayed vegetable substances. It is exceedingly productive.

14. *The soil of the atolls* is pulverized coral limestone, mixed with organic matter. It is well adapted to the various species of plants and palm-trees, which it supports.

15. **Climate.**—Except where modified by elevation, the climate is hot. In the lowlands fringing the coasts of the large islands, it is exceedingly hot and unhealthy. In the region of the China Sea, destructive storms, called typhoons, are of frequent occurrence.

16. *The temperature of the coral¹ islands* is uniform throughout the year. The only seasons are the rainy and the dry.

17. **Vegetation.**—The vegetation is tropical; that of the large islands includes rice, sugar-cane, coffee, cotton, hemp, and spices. Thick jungles of ferns, vines, rattan, and bamboo abound. U'pas-trees* are found in the forests.

18. *The vegetation of the coral islands* consists, chiefly, of coffee, sugar-cane, banana and camphor trees, date, bread-fruit, cocoa-nut, and other palms.

19. **Animals.**—The animals are similar to those of Southern Asia. They include the elephant, tiger, leopard, rhinoceros, hippopotamus, tapir, deer, and buffalo. The kangaroo is found in Australia, only.

20. *Enormous serpents and crocodiles* are numerous. The orang-outang, ape, and other species of the monkey are common.

21. *Many of the birds* are celebrated for their beautiful plumage. Among these, are the bird-of-paradise and the lyre-bird. Here is found the emu (ē'mū), or Australian ostrich.

22. **Minerals.**—Coal, iron, and copper are found in many of the larger islands; quicksilver, in Borneo; tin, of the finest quality, in the Island of Banca; and diamonds, in Celebes Island.

23. **People.**—The inhabitants of this grand division are, principally, of the Malay race. Those of Malaysia are mostly Mohammedans.

24. *Many of the natives* of the Polynesian Islands are uncivilized. Some of the tribes are savage and warlike, but most of them are peaceable and susceptible to civilization.

25. *The natives of Melanesia*, which includes New Guinea and the islands east of it, are a low type of the human race.

26. **Malaysia.**—The Islands of Malaysia are situated in the Torrid Zone. They are remarkable for their fertile soil, hot climate, destructive earthquakes, and volcanic

eruptions.² They contain more than half the population of Oceania.

27. **The Philippine Islands** belong to Spain. They contain a population of eight million inhabitants.

28. *The exports* are tobacco, rice, hemp, and coffee.

29. *Manila*, the capital, is, next to Melbourne, the largest city in Oceania. Its manufactures, which are extensive, include cordage, cloth, and cigars.

30. **The Dutch East Indies** comprise Java, Celebes, the Spice Islands, and parts of Borneo and Sumatra. Among the most valuable natural products are ebony, sandal-wood, gutta-percha, and bamboo.

31. **Borneo**, which is about the size of Texas, is the largest island in the world, except Australia.

32. **Sumatra** is noted for its forests of camphor-trees and mangrove bushes.

33. **Java** is the most densely populated region in the world. It excels in the production of coffee and sugar.

34. *Batavia*, the principal sea-port and commercial center of the Dutch possessions, is the residence of the Governor-General.

35. *The leading exports* are coffee, sugar, rice, cotton, gutta-percha, and spices.³

36. **Australasia.**—Australasia⁴ includes Australia, Tasmania (tāz mā'nīa), New Zealand, and the Islands of Melanesia.

37. *The surface of Australia* consists of a nearly level plain, bordered by low, mountain ranges on its eastern and western margins. Most of the interior is an inland basin, consisting of vast stretches of désert, with, here and there, a lake, or a salt marsh.

38. *It is watered* by periodical rains, which, in the wet season, convert the lowlands into an immense marsh. In the dry season, the scorching heat of summer quickly drives away every trace of moisture.

39. *The Murray and the Darling* are the largest rivers. Like other streams of Australia, they disappear during the hot season, leaving a succession of shallow pools to mark their course.

40. *The vegetation of Australia* is unlike that of any other part of the world.⁵

1. **The coral polyp**, which, in the first part of its life, is quite active, finally attaches itself to the bottom of the sea, in shallow water, and is thenceforth incapable of locomotion. It withdraws the carbonate of lime from the sea-water to make its skeleton, and grows in much the same manner as a tree, sending upward its main stalk, or trunk, from which grow many branches. The mouths of the coral almost entirely cover its outer surface, and resemble the petals of flowers, not only in shape, but also in the delicate shades of color. This polyp, of which there are many varieties, multiplies, chiefly, by this process of budding, or branching; also, by eggs, which are light enough to float. The eggs and young polyp are thus carried by marine currents to other shores. It cannot exist in water more than 120 feet deep.

2. **According to Javanese records**, Sumatra, Java, and Bali formerly constituted a single island. They were severed from one another by earthquakes and volcanic outbursts. In 1883, there was a terrific explosion in Krakatu, or Krakatoa (*krā kã tō' ā*), an island in the Strait of Sunda. A part of Java was involved in that convulsion, and more than 100,000 people perished.

3. **The spices** for which Malaysia is celebrated, are better in quality than those of other parts of the world. **Cinnamon** is the dried, inner bark of a tree. Much of the cinnamon of commerce comes, not from the cinnamon-tree, but from the cassia-tree. **Cloves**, the buds of an evergreen, are picked before the flower blooms, and dried, by smoking over a slow fire. **Pepper** is the dried berry of a vine. The province of Bantam, in Java, is the principal center of the pepper trade. **Nutmegs** are the fruit of the nutmeg-tree. The **mace** of commerce is a portion of the husk, or shell, that incloses the nutmeg.

4. **Australasia** signifies Southern Asia; **Australia**, southern land; **Micronesia**, small islands; **Melanesia**, black islands (so named on account of the complexion of the natives); **Polynesia**, many islands.

5. **It is estimated** that Australia contains nearly seven thousand species of plants not found elsewhere.

* *upas-tree*, a tree which contains poisonous secretions. It has been fabulously reported that the atmosphere surrounding it, is destructive to life.

41. *Tree-ferns and palms* are abundant in the north. The pine, oak, and eucalyptus (ū ka līp'tūs) trees⁶ in the south furnish an abundance of timber.

42. *The wild animals* are unlike those of other parts of the world.

43. *Many are marsupials* (marsu'pī als), or pouched animals. These include many varieties of the kangaroo. The ornithorhynchus (or ni tho rīnk'us) and emu are peculiar to Australia.⁷

44. *Most of the people of Australia* are of British descent. The natives are gradually disappearing.

45. *Australia is divided* into five colonies. The government of each is vested in a Governor, appointed by the Sovereign of Great Britain, and a legislative body chosen by the people.

46. *The leading occupations* are agriculture and the raising of cattle and sheep.

47. *In Victoria*, gold-mining is important.

48. *Melbourne*, the capital, is the largest city in Oceania. *Geelong* (gē long'), *Ballarat* (bāl la rat'), and *Sand'hurst* are commercial centers.

49. *From New South Wales*, the principal exports are wool, hides, grain, and gold.

50. *Sydney* is the capital and metropolis.

51. *In Queensland*, which is situated partly in the Torrid Zone, cotton and sugar-cane are cultivated.

52. *Brisbane* is the capital.

53. *South Australia* is settled in the southern part, only. Its chief products and exports are grain and wool.

54. *Ad'e laide* is the capital and sea-port.

55. *Western Australia and North Australia* have a few small settlements along the coast. Their leading exports are wool, copper, and sandal-wood.

56. *Perth*, the capital of Western Australia, is the only important town on the western coast.

57. *Tasmania*.—Tasmania, formerly called Van Diemen's Land, is a thriving British colony. The surface is mountainous and covered with forests.

58. *The principal products* are grain, wool, hides, and lumber. Coal is abundant.

59. *Hobart Town* is the capital.

60. *New Zealand*.—New Zealand, a British colony, comprises two large and a number of small islands. The

surface is mountainous and volcanic; the climate, mild and uniform.

61. *The principal products* are wool and grain.

62. *Wellington* is the capital.

63. *Auckland* is a sea-port and coaling station for steam-ships plying between San Francisco and Sydney.

64. *Papua* (pāp'ō a), or *New Guinea*, and the islands to the eastward, are under no general government. They contain a number of British and Dutch settlements.

65. *The Feejee Islands*, more than two hundred in number, belong to Great Britain. The exports are coconuts, cotton, palm-oil, and mother-of-pearl shells.

66. *Levuka* is the capital.

67. *The Hawaiian* (hā wī'an) *Kingdom*, or *Sandwich Islands*, consists of a group of fifteen islands.

68. *Hawaii* (hā wī'i), the largest island, contains a number of volcanoes,—one of which, Kilauea (kē low ā'ā), in the Mauna Loa (mow'nā lō'ā) Mountains, is nearly always active.

69. *The natives* have made rapid progress in civilization. They have excellent public schools and higher institutions of learning. Newspapers are published in the native language.⁸

70. *The government* is a constitutional monarchy.

71. *The leading industries* are the cultivation of the sugar-cane and the manufacture of sugar.

72. *Hon o lu'lu*, the capital, is the chief sea-port. It is one of the stations for the steamers trading between San Francisco, China, and Japan. It contains fine buildings, and a large American and English population.

73. *The Caroline Islands* comprise about sixty groups, containing about five hundred islands. They are nominally under Spanish protection.

74. *The Society Islands* are claimed by the French.

75. *The Samoan* (sā mō'ān) *Islands* have, besides the natives, a small European and American population.

A LANGUAGE LESSON IN TOPICAL GEOGRAPHY.

Each pupil may write a letter about one or more of these islands, as directed on page 32.

A TOPICAL DIAGRAM.

Each pupil may prepare a Written Exercise on these islands, as shown on page 32.

6. The eucalyptus, or gum-tree, is an evergreen. The young tree has leaves which are nearly circular. Each leaf is pierced by a square stem. Subsequently, the stem becomes round, and the leaf long and narrow, hanging with its point downward, and its edge turned to the sun. The blue gum-tree attains a height of from 200 to 300 feet. The foliage has a spicy aroma. The eucalyptus is now cultivated extensively on the Pacific Coast, in the Valley of the Nile, and elsewhere.

7. The young of marsupials, or pouched animals, are carried in the pouch of the mother until they are able to feed and take care of themselves. Even after they are partly grown, if frightened, or assailed, by enemies, they take refuge in the mother's pouch. The kangaroo, of which there are many species,

has short fore legs. By means of the hind legs, which are very long, it can leap fifteen or twenty feet. Its flesh is used for food, and its skin is valuable for leather. The ornithorhynchus, platypus (plat'y pus), or duck-bill, has a bill like that of a duck, and a body like that of an otter. It lives equally well on land or in water. Its fore feet are armed with claws, and its hinder ones are webbed like those of water-fowl. The emu, or Australian ostrich, is smaller than that of Africa, or of South America. Some of the animals of Tasmania, of which the dog-headed wolf is the largest, are similar to those of Australia.

8. The Sandwich Islanders have made rapid progress in civilization, but they are rapidly decreasing in number.



EXPLANATIONS.

Red names show Exports.
Red lines on water show Steamer Routes.
Brown lines on water show Sailing Routes.
Red lines on land show Railroads.
Black dotted lines in Asia & Africa show Caravan Routes.
Black dotted lines in water, Submarine Telegraph Cables.
Ocean Currents in Red.
Numbers in right margin show degrees of length of a degree of Longitude in Miles.
Steamer & Railroad Routes are divided so distances passed over every 24 hours by day and Trains.
1 day 2 3
Longitude



POPULATION OF THE LARGEST CITIES IN THE WORLD.

(According to the Statesman's Year Book and the Almanach de Gotha.)

RANK,—LONDON, PARIS, PEKIN, NEW YORK, CANTON, BERLIN, VIENNA, PHILADELPHIA.

NORTH AMERICA.

DOM. OF CANADA.	
Montreal.....	141,000
Toronto.....	87,000
Quebec.....	63,000
Halifax.....	37,000
Hamilton.....	36,000
Ottawa.....	28,000

UNITED STATES.

New York..(Est. 1886)	1,500,000
Philadelphia	1,000,000
Brooklyn (Census 1880)	567,000
Chicago.....	503,000
Boston.....	363,000
St. Louis.....	351,000
Baltimore.....	332,000
Cincinnati.....	255,000
San Francisco.....	234,000
New Orleans.....	216,000

CENTRAL AMERICA.

Gautemala.....	59,000
San Salvador.....	13,000
Tegucigalpa.....	12,000
San Jose.....	12,000
Managua.....	9,000

MEXICO.

Mexico.....	250,000
Leon.....	100,000
Guadalajara.....	80,000
Puebla.....	75,000
Guanaxato.....	56,000
San Luis Potosi.....	35,000

WEST INDIES.

Havana.....	206,000
Santiago de Cuba.....	45,000
Matanzas.....	37,000
Kingston.....	35,000
Port au Prince.....	22,000
San Domingo.....	15,000

SOUTH AMERICA.

U. S. OF COLOMBIA.	
Bogota.....	95,000
Medellin.....	20,000
Panama.....	19,000
Ibague.....	11,000

VENEZUELA.

Caracas.....	70,000
Valencia.....	36,000
Barquesimeto.....	29,000
Maracaybo.....	23,000

GUIANA.

Georgetown.....	37,000
Paramaribo.....	23,000
Cayenne.....	10,000

BRAZIL.

Rio Janeiro.....	350,000
Bahia.....	140,000
Recife.....	130,000
Belem, or Para.....	40,000
San Paulo.....	40,000
Maranhao.....	35,000

ECUADOR.

Quito.....	80,000
Guayaquil.....	40,000
Cuenca.....	30,000

PERU.

Lima.....	101,000
Callao.....	34,000
Arequipa.....	30,000

BOLIVIA.

La Paz.....	26,000
Cochabamba.....	15,000
Sucre.....	12,000
Potosi.....	11,000

CHILI.

Santiago.....	200,000
Valparaiso.....	95,000
Talca.....	19,000
Concepcion.....	19,000

ARGENTINE REPUBLIC.

Buenos Ayres.....	248,000
Cordova.....	40,000
Rosario.....	33,000
Tucuman.....	18,000

PARAGUAY.

Asuncion.....	20,000
Villa Rica.....	13,000
Concepcion.....	11,000

URUGUAY.

Montevideo.....	105,000
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EUROPE.

ENGLAND.

London.....	4,764,000
Liverpool.....	552,000
Birmingham.....	400,000
Manchester.....	393,000
Leeds.....	309,000
Sheffield.....	284,000
Bristol.....	206,000
Salford.....	204,000
Hull.....	161,000
Newcastle.....	145,000

SCOTLAND.

Glasgow.....	511,000
Edinburgh.....	228,000
Dundee.....	142,000
Aberdeen.....	105,000

IRELAND.

Dublin.....	339,000
Belfast.....	174,000
Cork.....	78,000
Limerick.....	42,000
Waterford.....	23,000
Londonderry.....	22,000

FRANCE.

Paris.....	2,270,000
Lyons.....	377,000
Marseilles.....	360,000
Bordeaux.....	221,000
Lille.....	178,000
Toulouse.....	140,000
St. Etienne.....	124,000
Nantes.....	124,000
Rouen.....	106,000
Havre.....	106,000

SWITZERLAND.

Geneva.....	68,000
Basel.....	62,000
Bern.....	44,000
Lausanne.....	36,000
Zurich.....	25,000
Lucerne.....	18,000

ITALY.

Naples.....	450,000
Milan.....	295,000
Rome.....	274,000
Turin.....	231,000
Palermo.....	220,000
Genoa.....	139,000
Florence.....	135,000
Venice.....	130,000
Bologna.....	104,000

GERMAN EMPIRE.

Berlin.....	1,123,000
Hamburg.....	411,000
Breslau.....	273,000
Munich.....	231,000
Dresden.....	223,000
Leipsic.....	155,000
Cologne.....	145,000
Konigsberg.....	141,000
Magdeberg.....	138,000
Hanover.....	123,000

THE NETHERLANDS.

Amsterdam.....	354,000
Rotterdam.....	170,000
The Hague.....	131,000
Utrecht.....	74,000
Groningen.....	50,000
Arnheim.....	45,000

DENMARK.

Copenhagen.....	180,000
Aarhus.....	25,000
Odense.....	21,000

NORWAY.

Christiania.....	77,000
Bergen.....	34,000

AUSTRO-HUNGARY.

Vienna.....	1,104,000
Buda-Pesth.....	361,000
Prague.....	162,000
Trieste.....	144,000
Lemberg.....	109,000

RUSSIA.

Moscow.....	751,000
St. Petersburg.....	700,000
Warsaw.....	407,000
Odessa.....	217,000
Riga.....	169,000
Kishenev.....	130,000
Cracow.....	129,000

SPAIN.

Madrid.....	350,000
Barcelona.....	247,000
Valencia.....	145,000
Seville.....	133,000
Malaga.....	114,000
Murcia.....	94,000

BELGIUM.

Brussels.....	375,000
Antwerp.....	180,000
Ghent.....	137,000
Liege.....	130,000
Bruges.....	45,000
Malines.....	45,000

TURKEY.

(Estimated—No Census.)	
Constantinople.....	500,000
Salonica.....	80,000
Adrianople.....	62,000
Philippopolis.....	25,000

BULGARIA.

Roustchouk.....	26,000
Varna.....	24,000
Sophia.....	21,000
Timova.....	12,000

SERVIA.

Belgrade.....	37,000
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ROUMANIA.

Bucharest.....	221,000
Jassy.....	90,000
Galatz.....	80,000

GREECE.

Athens.....	50,000
Patras.....	26,000
Hermopolis.....	22,000

PORTUGAL.

Lisbon.....	247,000
Oporto.....	106,000
Braga.....	20,000

SWEDEN.

Stockholm.....	175,000
Gottenburg.....	82,000
Malmö.....	41,000

ASIA.

AFGHANISTAN.

(Estimated—No Census.)	
Cabul.....	65,000
Herat.....	50,000
Candahar.....	50,000

ARABIA.

(Estimated—No Census.)	
Muscat.....	60,000
Aden.....	50,000
Mecca.....	50,000
Medina.....	20,000
Sana.....	20,000

JAPAN.

Tokio.....	823,000
Osaka.....	294,000
Kioto.....	240,000
Yokohama.....	64,000
Nagasaki.....	40,000

CHINESE EMPIRE.

(Estimated—No Census.)	
Pekin.....(Est. 1886)	1,600,000
Canton.....	1,300,000
Tientsin.....	930,000
Hang Chow.....	700,000
Foo Chow.....	630,000
Shanghai.....	350,000

BRITISH INDIA.

Calcutta.....	795,000
Bombay.....	644,000
Madras.....	405,000
Hyderabad.....	355,000
Delhi.....	174,000
Benares.....	171,000
Cawnpore.....	151,000

FARTHER INDIA.

(Estimated—No Census.)	
Bangkok.....	600,000
Saigon.....	120,000
Mandalay.....	100,000
Singapore.....	60,000
Hue.....	50,000

SIBERIA.

Tiflis.....	104,000
Samarcand.....	36,000
Irkootsk.....	35,000
Tomsk.....	34,000
Omsk.....	28,000
Tobolsk.....	22,000

PERSIA.

(Estimated—No Census.)	
Teheran.....	200,000
Tabriz.....	165,000
Meshed.....	60,000
Ispahan.....	60,000

TURKEY.

(Estimated—No Census.)

Smyrna.....	150,000
Damascus.....	150,000
Aleppo.....	70,000
Bagdad.....	60,000
Beyrout.....	60,000
Trebizond.....	32,000
Jerusalem.....	28,000

AFRICA.

EGYPT.

Cairo.....	388,000
Alexandria.....	209,000
Khartoum.....	60,000
Tantah.....	39,000
Damietta.....	35,000
Massuah.....	27,000

THE BARBARY STATES.

Tunis.....	100,000
Algiers.....	71,000
Oran.....	59,000
Constantine.....	39,000

GUINEA COAST.

(Estimated—No Census.)

Coomassie.....	50,000
Abomey.....	50,000
Lagos.....	35,000
St. Paul de Loanda.....	20,000
Monrovia.....	15,000
St. Louis.....	12,000
Brasso.....	10,000

INDIAN COAST.

(Estimated—No Census.)

Zanzibar.....	80,000
Gondar.....	20,000
Mombas.....	15,000
Quilca.....	15,000
Mozambique.....	15,000
Quilimane.....	13,000

MADAGASCAR.

Tananarivo.....	130,000
Port Louis.....	70,000
Tamatave.....	6,000

CAPE COAST.

Cape Town.....	45,000
Durban.....	17,000

OCEANIA.

AUSTRALASIA.

Melbourne.....	283,000
Sydney.....	221,000
Adelaide.....	68,000
Dunedin.....	43,000
Ballarat.....	41,000
Sandhurst.....	39,000
Brisbane.....	36,000

MALAYSIA.

Manila.....	270,000
Surabaya.....	100,000
Batavia.....	99,000
Samarang.....	60,000

SANDWICH ISLANDS.

Honolulu.....	16,000
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FEEJEE ISLANDS.

Levuka.....	30,000
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THE PRINCIPAL MOUNTAINS OF THE WORLD.

AREA AND POPULATION OF THE UNITED STATES; CENSUS, 1880.

UNITED STATES—Area, including Alaska, 3,605,000 sq. mi.; Population, including Alaska, 50,257,783.*

ALABAMA. [Ala.] <i>Area, 52,250 sq. mi.; Pop., 1,262,505.</i> 1880. 18 Mobile..... 29,132 Montgomery..... 16,714 Selma..... 7,529 Birmingham..... 6,000	ILLINOIS. [Ill.] <i>Area, 58,650 sq. mi.; Pop., 3,077,871.</i> 1880. 18 Chicago..... 503,185 Peoria..... 29,259 Quincy..... 27,268 Springfield..... 19,746 Bloomington..... 17,184 Joliet..... 16,145 Rockford..... 13,185 Aurora..... 11,825 Rock Island..... 11,660 Galesburg..... 11,446	MASSACHUSETTS. [Mass.] <i>Area, 8,315 sq. mi.; Pop., 1,783,885.</i> 1880. 18 Boston..... 362,839 Lowell..... 59,475 Worcester..... 58,291 Cambridge..... 52,669 Fall River..... 48,961 Lawrence..... 39,151 Lynn..... 38,274 Springfield..... 33,340 Salem..... 27,563 New Bedford..... 26,845 Somerville..... 24,933 Holyoke..... 21,915 Chelsea..... 21,782 Taunton..... 21,213 Gloucester..... 19,329 Haverhill..... 18,475 Newton..... 18,995 Newburyport..... 13,537 Pittsfield..... 13,367 Fitchburg..... 12,405 Northampton..... 12,171	NEW JERSEY. [N. J.] <i>Area, 7,815 sq. mi.; Pop., 1,151,116.</i> 1880. 18 Newark..... 136,508 Jersey City..... 120,722 Paterson..... 51,031 Camden..... 41,659 Hoboken..... 30,999 Trenton..... 29,910 Elizabeth..... 28,229 New Brunswick..... 17,167 Orange..... 13,206 Bayonne..... 9,372	RHODE ISLAND. [R. I.] <i>Area, 1,250 sq. mi.; Pop., 276,531.</i> 1880. 18 Providence..... 104,857 Pawtucket..... 19,030 Woonsocket..... 16,053 Newport..... 15,693
ARKANSAS. [Ark.] <i>Area, 53,850 sq. mi.; Pop., 802,525.</i> 1880. 18 Little Rock..... 13,185 Fort Smith..... 4,400 Helena..... 4,200 Hot Springs..... 4,000	INDIANA. [Ind.] <i>Area, 36,350 sq. mi.; Pop., 1,978,301.</i> 1880. 18 Indianapolis..... 75,056 Evansville..... 29,280 Fort Wayne..... 26,880 Terre Haute..... 26,042 New Albany..... 16,422 Lafayette..... 14,860 South Bend..... 13,279 Richmond..... 12,743 Logansport..... 11,198	MICHIGAN. [Mich.] <i>Area, 58,915 sq. mi.; Pop., 1,636,937.</i> 1880. 18 Detroit..... 116,340 Grand Rapids..... 32,016 Bay City..... 20,693 East Saginaw..... 19,016 Jackson..... 16,105 Kalamazoo..... 11,937 Muskegon..... 11,262 Saginaw City..... 10,525	NEW YORK. [N. Y.] <i>Area, 49,170 sq. mi.; Pop., 5,082,871.</i> 1880. 18 New York..... 1,206,299 Brooklyn..... 566,653 Buffalo..... 155,134 Albany..... 90,758 Rochester..... 89,366 Troy..... 56,747 Syracuse..... 51,792 Utica..... 33,914 Auburn..... 21,924 Oswego..... 21,116 Elmira..... 20,541 Poughkeepsie..... 20,207 Cohoes..... 19,417 Yonkers..... 18,892 Kingston..... 18,342 Newburg..... 18,050 Binghamton..... 17,315 Long Island City..... 17,117 Flushing..... 15,919 Schenectady..... 13,675 Lockport..... 13,522 Rome..... 12,045 Ithaca..... 11,201 Hudson..... 8,779	SOUTH CAROLINA. [S. C.] <i>Area, 80,570 sq. mi.; Pop., 995,577.</i> 1880. 18 Charleston..... 49,984 Columbia..... 10,040 Greenville..... 6,159
CALIFORNIA. [Cal.] <i>Area, 153,360 sq. mi.; Pop., 864,694.</i> 1880. 18 San Francisco..... 233,959 Oakland..... 34,555 Sacramento..... 21,420 San Jose..... 12,567 Los Angeles..... 11,311 Stockton..... 10,287 Grass Valley..... 7,000 Santa Rosa..... 7,000	IOWA. [Ia.] <i>Area, 56,025 sq. mi.; Pop., 1,624,615.</i> 1880. 18 Des Moines..... 22,408 Dubuque..... 22,254 Davenport..... 21,831 Burlington..... 19,450 Council Bluffs..... 18,059 Keokuk..... 12,117 Cedar Rapids..... 10,104	MINNESOTA. [Minn.] <i>Area, 82,365 sq. mi.; Pop., 780,775.</i> 1880. 18 Minneapolis..... 46,887 St. Paul..... 41,473 Winona..... 10,208	NORTH CAROLINA. [N. C.] <i>Area, 52,250 sq. mi.; Pop., 1,399,550.</i> 1880. 18 Wilmington..... 17,350 Raleigh..... 9,265 Charlotte..... 7,094 New Berne..... 6,443	TENNESSEE. [Tenn.] <i>Area, 42,050 sq. mi.; Pop., 1,512,359.</i> 1880. 18 Nashville..... 43,350 Memphis..... 33,592 Chattanooga..... 12,892 Knoxville..... 9,690
CONNECTICUT. [Conn.] <i>Area, 4,990 sq. mi.; Pop., 622,700.</i> 1880. 18 New Haven..... 62,882 Hartford..... 42,015 Bridgeport..... 27,643 Norwich..... 21,141 Waterbury..... 20,269 Meriden..... 18,340 New Britain..... 13,980 Norwalk..... 13,956 Danbury..... 11,669 Stamford..... 11,298	KANSAS. [Kan.] <i>Area, 82,080 sq. mi.; Pop., 996,066.</i> 1880. 18 Leavenworth..... 16,546 Topeka..... 15,451 Atchison..... 15,105 Lawrence..... 8,510 Wyandotte..... 6,149 Fort Scott..... 5,372	MISSISSIPPI. [Miss.] <i>Area, 46,810 sq. mi.; Pop., 1,131,597.</i> 1880. 18 Vicksburg..... 11,814 Natchez..... 9,057 Jackson..... 6,050 Columbus..... 6,000	OHIO. [O.] <i>Area, 41,060 sq. mi.; Pop., 3,198,062.</i> 1880. 18 Cincinnati..... 255,139 Cleveland..... 160,146 Columbus..... 51,647 Toledo..... 50,137 Dayton..... 38,678 Springfield..... 20,730 Zanesville..... 18,120 Akron..... 16,512 Sandusky..... 15,838 Youngstown..... 15,431 Canton..... 12,258 Hamilton..... 12,122 Steubenville..... 12,039 Portsmouth..... 11,314 Chillicothe..... 10,938	TEXAS. [Tex.] <i>Area, 265,780 sq. mi.; Pop., 1,591,749.</i> 1880. 18 Galveston..... 22,248 San Antonio..... 20,550 Houston..... 18,646 Austin..... 10,960 Dallas..... 10,358
COLORADO. [Colo.] <i>Area, 103,925 sq. mi.; Pop., 194,327.</i> 1880. 18 Denver..... 35,629 Leadville..... 14,820 Colorado Springs..... 4,225	KENTUCKY. [Ky.] <i>Area, 40,400 sq. mi.; Pop., 1,648,690.</i> 1880. 18 Louisville..... 123,758 Covington..... 29,720 Newport..... 20,433 Lexington..... 16,656 Paducah..... 8,376	MISSOURI. [Mo.] <i>Area, 69,415 sq. mi.; Pop., 2,163,880.</i> 1880. 18 St. Louis..... 350,518 Kansas City..... 55,785 St. Joseph..... 32,431 Hannibal..... 11,074	NORTH CAROLINA. [N. C.] <i>Area, 52,250 sq. mi.; Pop., 1,399,550.</i> 1880. 18 Wilmington..... 17,350 Raleigh..... 9,265 Charlotte..... 7,094 New Berne..... 6,443	VERMONT. [Vt.] <i>Area, 9,565 sq. mi.; Pop., 332,236.</i> 1880. 18 Rutland..... 12,149 Burlington..... 11,364
DELAWARE. [Del.] <i>Area, 2,050 sq. mi.; Pop., 146,608.</i> 1880. 18 Wilmington..... 42,478 Newcastle..... 3,700 Dover..... 3,000 Smymna..... 2,490	LOUISIANA. [La.] <i>Area, 48,720 sq. mi.; Pop., 939,946.</i> 1880. 18 New Orleans..... 216,090 Shreveport..... 11,017 Baton Rouge..... 7,217	NEBRASKA. [Neb.] <i>Area, 76,855 sq. mi.; Pop., 452,407.</i> 1880. 18 Omaha..... 30,518 Lincoln..... 13,064 Nebraska City..... 4,800	OHIO. [O.] <i>Area, 41,060 sq. mi.; Pop., 3,198,062.</i> 1880. 18 Cincinnati..... 255,139 Cleveland..... 160,146 Columbus..... 51,647 Toledo..... 50,137 Dayton..... 38,678 Springfield..... 20,730 Zanesville..... 18,120 Akron..... 16,512 Sandusky..... 15,838 Youngstown..... 15,431 Canton..... 12,258 Hamilton..... 12,122 Steubenville..... 12,039 Portsmouth..... 11,314 Chillicothe..... 10,938	VIRGINIA. [Va.] <i>Area, 42,450 sq. mi.; Pop., 1,512,565.</i> 1880. 18 Richmond..... 63,600 Norfolk..... 21,966 Petersburg..... 21,656 Lynchburg..... 15,959 Alexandria..... 13,658 Portsmouth..... 11,388
DISTRICT OF COLUMBIA. [D. C.] <i>Area, 70 sq. mi.; Pop., 177,624.</i> 1880. 18 Washington..... 147,293 Georgetown..... 12,578	MAINE. [Me.] <i>Area, 33,040 sq. mi.; Pop., 643,930.</i> 1880. 18 Portland..... 33,810 Lewiston..... 19,083 Bangor..... 16,857 Biddeford..... 12,652	NEVADA. [Nev.] <i>Area, 110,700 sq. mi.; Pop., 62,266.</i> 1880. 18 Virginia City..... 13,705 Gold Hill..... 9,000 Carson City..... 4,850	OREGON. [Oreg.] <i>Area, 96,030 sq. mi.; Pop., 174,768.</i> 1880. 18 Portland..... 21,000 Salem..... 4,100 Astoria..... 3,680 Dalles..... 2,250	WEST VIRGINIA. [W. Va.] <i>Area, 24,780 sq. mi.; Pop., 618,457.</i> 1880. 18 Wheeling..... 30,737
FLORIDA. [Fla.] <i>Area, 58,680 sq. mi.; Pop., 269,493.</i> 1880. 18 Jacksonville..... 7,650 Pensacola..... 6,845 Tallahassee..... 2,494	MARYLAND. [Md.] <i>Area, 12,210 sq. mi.; Pop., 934,945.</i> 1880. 18 Baltimore..... 332,313 Cumberland..... 10,669 Frederick..... 8,486	NEW HAMPSHIRE. [N. H.] <i>Area, 9,305 sq. mi.; Pop., 546,991.</i> 1880. 18 Manchester..... 32,630 Concord..... 13,838 Nashua..... 13,397 Dover..... 11,687 Portsmouth..... 9,732 Keene..... 6,786	PENNSYLVANIA. [Pa.] <i>Area, 45,215 sq. mi.; Pop., 4,238,891.</i> 1880. 18 Philadelphia..... 847,170 Pittsburgh..... 156,389 Allegheny..... 78,682 Scranton..... 45,850 Reading..... 43,278 Harrisburg..... 30,762 Erie..... 27,737	WISCONSIN. [Wis.] <i>Area, 56,040 sq. mi.; Pop., 1,315,497.</i> 1880. 18 Milwaukee..... 115,587 Racine..... 16,031 Oshkosh..... 15,749 La Crosse..... 14,505 Fond du Lac..... 13,091 Madison..... 10,325 Eu Claire..... 10,118 Janesville..... 9,000 Appleton..... 8,015 Watertown..... 7,868 Green Bay..... 7,735 Sheboygan..... 7,330 Manitowoc..... 6,600
GEORGIA. [Ga.] <i>Area, 59,475 sq. mi.; Pop., 1,542,180.</i> 1880. 18 Atlanta..... 37,409 Savannah..... 30,709 Augusta..... 21,891 Macon..... 12,749 Columbus..... 10,123 Athens..... 6,699 Rome..... 3,877				

TERRITORIES.

ALASKA. [Alas.] <i>Area, 580,000 sq. mi.; Pop., 30,000.</i>	DAKOTA. [Dak.] <i>Area, 149,100 sq. mi.; Pop., 135,177.</i>	MONTANA. [Mont.] <i>Area, 146,080 sq. mi.; Pop., 39,159.</i>	UTAH. [Ut.] <i>Area, 84,970 sq. mi.; Pop., 143,963.</i>	WYOMING. [Wyo.] <i>Area, 97,890 sq. mi.; Pop., 20,789.</i>
ARIZONA. [Ariz.] <i>Area, 113,020 sq. mi.; Pop., 40,440.</i>	IDAHO. [Ida.] <i>Area, 84,800 sq. mi.; Pop., 32,610.</i>	NEW MEXICO. [N. Mex.] <i>Area, 122,530 sq. mi.; Pop., 119,565.</i>	WASHINGTON. [Wash.] <i>Area, 69,180 sq. mi.; Pop., 75,116.</i>	INDIAN. [Ind. Ter.] <i>Area, 64,690 sq. mi.; Pop., 72,000.</i>

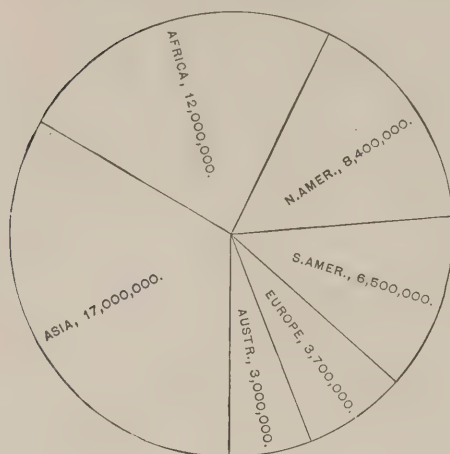
NOTE.—The blank spaces may be filled, from time to time, as the changes in population are ascertained.

* Indians, about 350,000, are not included.

COMPARATIVE GEOGRAPHY.

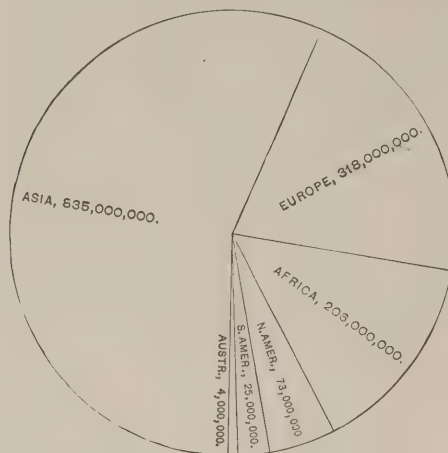
AREA OF CONTINENTS.

TOTAL, 50,800,000 SQ. MILES.



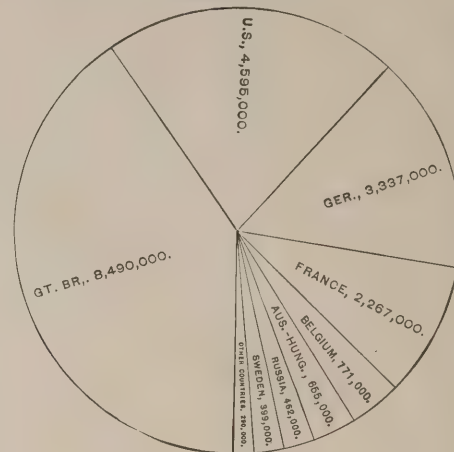
POPULATION OF WORLD,

1,481,000,000



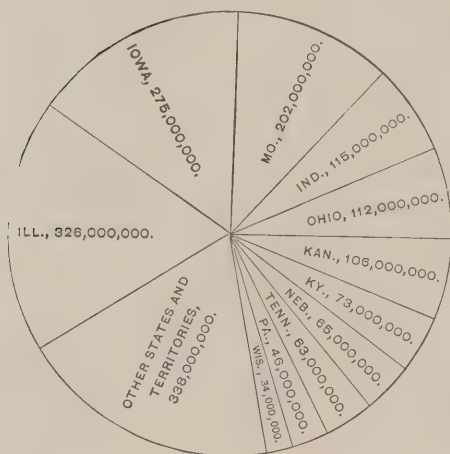
WORLD'S YEARLY PRODUCT OF IRON,

21,266,000 TONS.



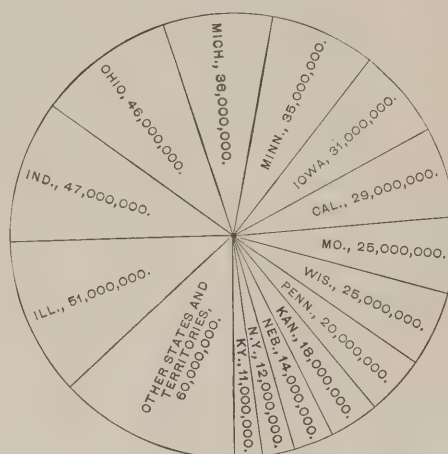
CORN CROP, 1880.

U. S., 1,755,000,000 BU.



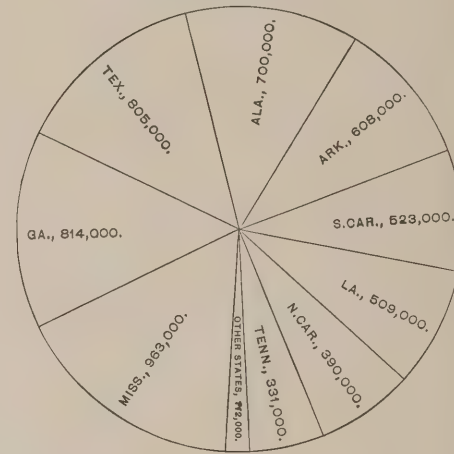
WHEAT CROP, 1880.

U. S., 460,000,000 BU.



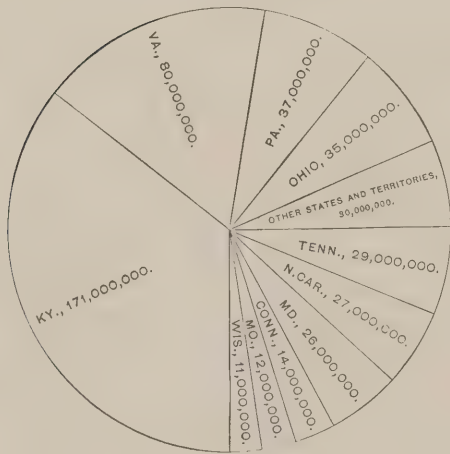
COTTON CROP, 1880,

U. S., 5,755,000 BALES.



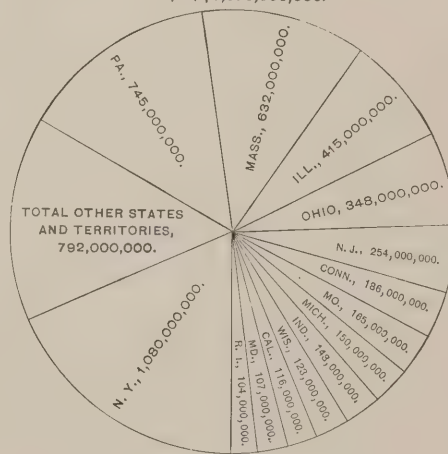
TOBACCO CROP, 1880.

U. S., 472,000,000 LBS.

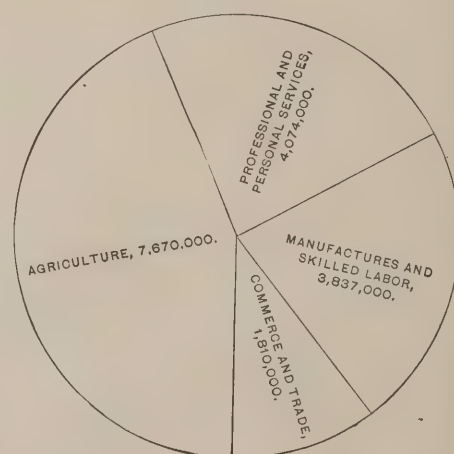


VALUE OF MANUFACTURES IN 1880.

U. S., \$5,370,000,000.



OCCUPATIONS OF THE PEOPLE, 1880, OF THE U. S.



EXERCISES ON THE PHYSICAL AND COMMERCIAL CHART.

What is the general direction of the Gulf Stream? (See chart on preceding page.) To the shores of what countries do its waters drift? What corresponding current in the Pacific Ocean? What effect have these currents on the climate of the coasts against which they drift?

At what port do steamers touch in a voyage from New York to Liverpool? In what direction do vessels sail in going from New York to Melbourne? At what port do they touch, on the way? What direction do vessels take in a voyage from San Francisco to Japan? At what ports do steamers touch in going from San Francisco to Sydney? What route would you take in a voyage by steamer, from

New York to Point de Galle (*gall*), Ceylon?—from Point de Galle to San Francisco?—from San Francisco to New York. Mention the ports at which you would touch. What route do steamers take in going from New York to San Francisco? At what ports on the Atlantic Ocean would they touch?—at what ports on the Pacific? In how many days could you make that voyage? What route do sailing vessels take, in making it? In how many days, by way of the Isthmus of Panama?

Questions on Diagrams.—Which grand division has the greatest area?—the greatest population? What four countries produce the most iron? What four states produce the most corn?—wheat?—cotton?—tobacco? Which excel in manufactures? What is the principal occupation of the people of the United States? How many are engaged in agriculture? Mention the other leading occupations.

MODELS AND DIRECTIONS FOR DRAWING MAPS OF THE CONTINENTS

ON A UNIFORM SCALE, AND OF ANY SIZE, ON PAPER OR THE BLACKBOARD;

COMBINED WITH COMPARATIVE AREA.

For each Continent, an oblong diagram is constructed, whose four sides shall contain its four principal capes—the most northern, eastern, southern, and western. This diagram is divided into squares, each side of which represents the distance of 400 miles—the length of Kansas. The number of these squares indicate the extent of the continent, thus reducing, to a minimum, the requirements for remembering distances.

DIRECTIONS.—To draw a map of South America, use as a scale, that shown on page 37, and construct a diagram eight by twelve measures, divided by light pencil lines, into numbered squares, as shown in the model; and on its sides, locate the four principal capes—Gallinas, St. Roque, Horn, and Blanco. Between these capes, draw the outline of the continent, through the squares, and part of squares, on your diagram, corresponding to those in the model.

Draw the mountains and rivers, and locate the capes, islands, bays, and principal cities, marking their names.

A profile, showing elevations of the surface, may be added under the drawing. (See page 33.)

When the map is completed in ink, the small squares, or construction lines, may be removed with India rubber.

Maps of the other Continents may be drawn in a similar manner.

KEY TO PROFILES.

SOUTH AMERICA.

- | | |
|--------------------|---------------------|
| 1.—Mt. Chimborazo. | 7.—Mt. Sahama. |
| 2.—Vol. Antisanl. | 8.—Lake Titicaca. |
| 3.—Vol. Cotopaxi. | 9.—La Paz. |
| 4.—Quito. | 10.—Paraguay River. |
| 5.—Lima. | 11.—Parana River. |
| 6.—Atacama. | 12.—Rio Janeiro. |

AUSTRALIA.

- 1.—The Coast.
- 2.—Darling River.
- 3.—Blue Mountains.
- 4.—Sydney.

EUROPE.

- 1.—The Coast.
- 2.—Rhône River.
- 3.—Mt. Blanc.
- 4.—Adriatic Sea.
- 5.—Carpathian Mountains.
- 6.—Black Sea.
- 7.—Crimca.
- 8.—Mt. Elboorz.
- 9.—Mt. Kazbek.
- 10.—Caspian Sea.

NORTH AMERICA.

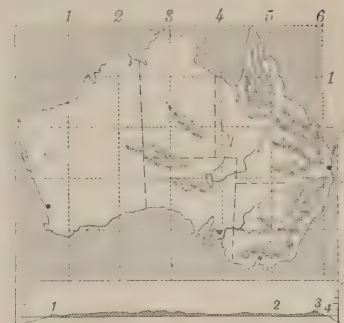
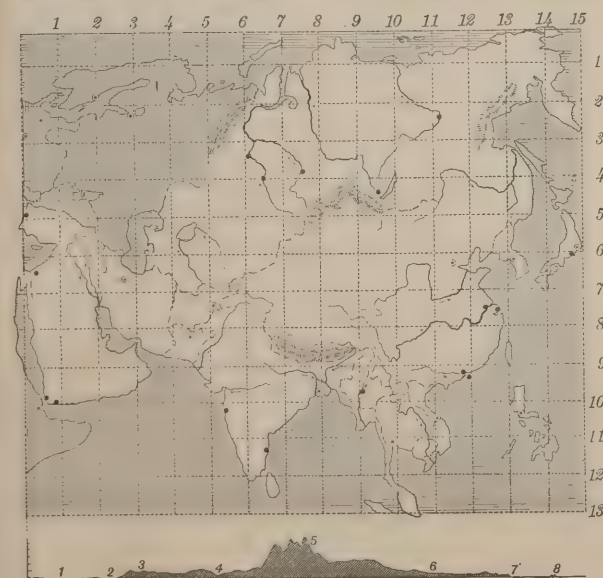
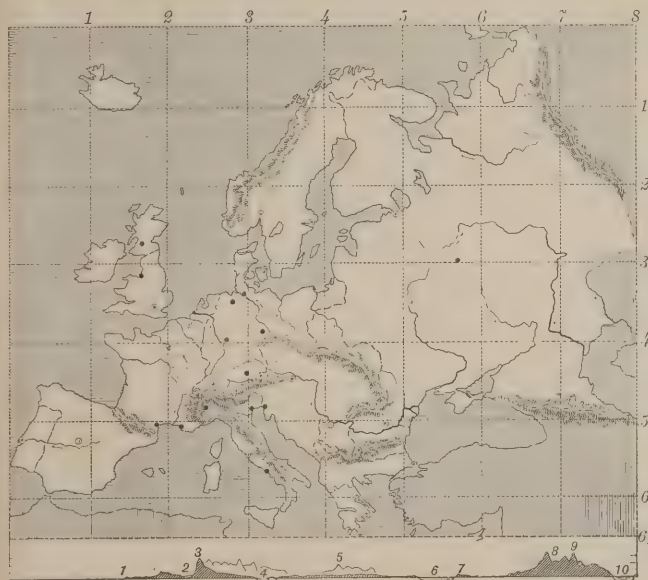
- 1.—Pacific Ocean.
- 2.—Coast Range.
- 3.—Sierra Nevada.
- 4.—Great Salt L.
- 5.—Black Hills.
- 6.—Missouri River.
- 7.—St. Paul.
- 8.—Lake Michigan.
- 9.—Lake Huron.
- 10.—Ottawa.
- 11.—Montreal.
- 12.—Halifax.

ASIA.

- 1.—Syrian Desert.
- 2.—Persian Gulf.
- 3.—Persian Plateau.
- 4.—Indus River.
- 5.—Mt. Everest.
- 6.—Yang-tse-Kiang.
- 7.—Yellow Sea.
- 8.—Liu Kiu Islands.

AFRICA.

- 1.—Cape Verd.
- 2.—Senegal River.
- 3, 4.—Niger River.
- 5.—Lake Tchad.
- 6.—Lake Fittre.
- 7.—Marrah Mountains.
- 8.—Gondar.
- 9.—Ras Daschan.
- 10.—Abba Yared.
- 11.—Ankobar.
- 12.—Str. of Bab-el-Mandeb.
- 13.—Peak of Teneriffe.
- 14.—Mt. Miltzin.
- 15.—Cameroons Mountains.
- 16.—Mt. Gambaragara.
- 17.—Mt. Kenia.



VOCABULARY.

KEY TO PRONUNCIATION.—*ā, ē, ī, ō, ū, y, long; ä, ë, ï, ö, ü, y, short; fār, lāst, fāl, cāre; tērm; fōd, fōt, fūr; ô as in fôr; oi as in oil; ow as in cow; ç as s; ch as k; ch as in chin; ġ as in ġet; ġ as j; ŋ as in linger, lik; th as in thin; th as in thine; e as a; i as e; canceled letters (a, etc.) silent; z as z.*

Aar, ār	Al' tōrf	Arica, ā rē' kā	Bal mor' al	Bōm bāy'	Calaveras,	Celebes, sēl' e bīz
Ab' ēn heīm	Al vā rā' dō	Arkansas,	Bānē' a	Bonifaccio	kā lā vā' rās	Cephalonia,
Ab' er dēēn	Am' a zōn	ār' kan sạ (state)	Bangkok,	bo ne fā' cho	Cal' ca sieū	chēf ā lō' nē ā
Abomey	Amboy, ām boi'	ār kan' sas (river)	bān kōk'	Bō' thī a	Cāl eūt' ta	Cevennes,
āb ō mā'	Amherst,	Armagh, ār mā'	Bangor,	Bordeaux,	Cāl lā' ō	sā' vēn'
Aboukir	ām' erst	Ar mē' nī a	bān' ġer (Eng.),	bōr dō'	Cām' brīdġe	Ceylon, sē lōn'
ā boo keer'	Amiens,	Arn' heīm	bān' ġōr (U. S.)	Borgia, bor' jā	Campagna,	Chā' ġrēs
Ab ys sīn' ī a	ā' mī ān	A rōōs' tōōk	Bār bā' doēs	Borgne,	kām pān' yā	Chā leur'
Acapulco	Amite, a mēt'	Artois, ār twā'	Barcelona,	bōrn	Campbell,	Chamouni
ā kā pōōl' kō	A mōō'	A rūn' dēl	bār sēl ō' nā	Bōr nōō',	kām' el	shā mōō ne'
Ac cō māk'	A mōōr'	A shān' tēē	Bār ne ġāt'	or Bor nou'	Campeachy,	Champagne,
Acheen, āt chēn'	A mos' kē ag	Ash' leŷ	Bār n' sta ble	Bosnia, bōz' nī ā	kām pē' chē	shōn pān'
Acoma, ā ko' mā	Amoy, ā moi'	Ashtabula,	Barranquilla	Bōs' pō rūš,	Cām' pō Sān' tō	Champaign,
A cōn cā' ġuā	Am' ster dām	āsh ta bū' lā	bā rān kēl' yā	or Bosphorus	Cānajokharie,	shām pān'
Ac qui'	Anadeer,	As' pīn wāl	Basque, bāsk	Bōth' nī a	kān a jō hār' re	Champlain,
A' crā	ān a dēr'	Assam, ās sām'	Basel, or Bale,	Bōt' zen	Cān an dāi' gua	shām plān'
A dā' lī ā	Anahuac,	As' sen	bā' zel, bāl	Boulagne,	Canaries,	Chandeleur,
A dā' nā	ān ā wāk'	As sīn' ī boine	Bās sā' nō	bōō lōn'	ka nā' rēz	shān de lōōr'
A dēl'	Anam, a nām,'	As tō' rī a	Bāth' urst	Bourbon,	Ca na ve rāl	Chantilly,
A' den	An cō' nā	As trā khān'	Baton Rouge	bōōr' būn	Cān dā hār'	shōn tēl ye'
Ad' ī ġē	Andalusia,	Asuncion,	bāt' ūn rōōzh	Bowdoin,	Cannes, kān	Chā pā' lā
Ad i rōn' dāck	ān dā lōō thē' ā	ā soon the ōn'	Bayonne,	bō' den	Canterbury,	Chā pūl' te pēc
Ad ri an ō' ple	An da mām'	At ā cā' mā	bā yōn'	Brāh ma pōō' tra	kān' ter ber ī	Chartres,
Ad rī āt' īc	Andes, ān' dēz	Atchafalaya,	Bayou, bī' ōō	Bras d' Or,	Canton,	shārt' r
Af ġhān īs tān'	Andorra,	āch af a lī' a	Beaufort,	brā dōr'	kān' tōn, U. S.	Cha ryb' dis, ka
Agen, ā zhān'	ān dor' rā	Ath a bās' ca	bō' fort, N. Car.	Brash' ear	kān tōn', China.	Chāt ta nōō' ġa
Agincourt,	Andover,	Ath' ēnġ	Beaufort,	Braunfels	Cape Girardeau,	Chāt' ham
ā zhān kōōr'	ān' do ver	Ath lōnē'	bū' furt, S. Car.	brown' fels	jē rār dō'	Chaumont,
A' ġuā Nue vā	Androscoggin,	At lān' ta	Bed' ou in	Brā' zos	Cape Haitien,	shō mōn'
A ġul' hās, yāhs	ān dros cōġ' īn	Aubigny,	Bel' fast	Brēm' en	hā' te ēn	Chautauqua,
Aix lā Chā pēllē'	Angara,	ō bēn' yē	Bēl ġrādē'	Breslau,	Capri, kā' prē	sha tē' kwa
Ajaccio,	ān ġā rā'	Auerbach,	Bēllē' fōn tāl' nē	brēs' low	Cā rā' eās	Chēlms' fōrd
ā yāt' chō	Angers, ōn zhā'	ow' er bāk	Bēl ōō chīs tān'	Bretagne,	Caravaggio,	Chēl' sēā
Al a bā' ma	An' ġlē sēŷ	Au' ġūs teēn, St.	Benares,	bre tān'	kā rā vād' jō	Chemung,
Alameda	An ġō' la	Au rō' ra	bēn ā' rēz	Brē' ton	Cardenas	she mūng'
ā lā mā' da	An ġō' ra	Au Sā' ble	Bēn eōō' len	Brindisi,	kar' dā nās	Cherbourg,
A' lā mōs	Angouleme,	Au' ster lītz	Benguela,	brēn' dē sē	Cār īb bē' an	shēr' būrg
A lās' ka	ōn ġōō lām'	Australasia,	bēn ġā' lā	Brück	Car' īb bees	Chēs' a pēākē
Al bā' nī ā	An' hālt	as tral ā' shī a	Benicia,	Bruges, brū' jēz	Carlisle, kār līl'	Che sūn' eōōk
Al' bans, St.	Anjou, ōn zhōō'	Aus trā' lī a	be nīsh' ī ā	Bucharest,	Carlsbad,	Cheviot,
Al' ba nŷ	An tī eōs' tī	Autueil, ō tweel'	Benin, bēn ēn'	bū' ka rést	kārīs' bāt	chīv' e üt
Al' be mārle	An tīē' tam	Autun, ō tūn'	Bēn-Lō' mond	Buda-Pesth,	Carlsrona,	Cheyenne,
Al bī' nō	Antigua,	Auvergne,	Bēn-Nēv' īs	bōō' dō pēst	kārīs krōō' na	shī ēn'
Al' bi an	ān tē' ga	ō vārn'	Bēġ' en, U. S.	Būē' na Vīs' tā	Carlsruhe,	Chicago,
Albuquerque	Antilles,	Aux Cayes, o kā'	Bēġ' en, N' way	Buenos Ayres,	kārīs' rōō	she kạ' ġō
āl bōō ker' kā	ān tīl' lēz	Aveyron,	Bē' ring	bō' nūs ā' rīz	Cār' mel	Chīck a hōm' ī nŷ
Al' der neŷ	Ant' werp	ā va rōn'	Bēr' līn, U. S.	Bulgaria,	Cār rā' rē	Chīck a māv' ġa
Alençon,	Apache,	Avignon,	Bēr lin', Fr., lēn	bōōl ġā' rī a.	Carpentaria	Chīck' a sạw
ā lōn sōn'	ā pā' chā	ā vēn yōn'	Bermudas,	Bur' ġūn dŷ	kār pēn tā' rē ā	Chihuahua,
A lēp' pō	Ap' en nīnēŷ	A' von	ber mū' daz	Byzantium,	Cār ta ġē' na	chē wā' wā
Al ēs sān' drī ā	Appalachee,	Ayr, air, ār	Bēr nē	bē zān' shī ūm	Cāsh mērē'	Chīl' kat
Aleutian,	āp pa lāch' ē	A zōres'	Besançon,		Cas sā' no	Chīl' ī
ā lū' shī an	App pa lā' chī an		b'z ōn' sōn	Cabul, kā bōōl'	Cassiquiare,	Chī lī coth' e
Algeria	App pa lāch ī cō' la	Baalbec, bāl' bēk	Beyroot, bā' rōōt	Caceres,	kā sē kē ā' rē	Chillon, shē' yōn
āl jē' rī a	Ap pō māt' ox	Bāb-ēl-Mām' dēb	Bīl bā' ō	kā' thā rēs	Castiglione,	Chiloe, chē lō ā'
Algiers,	Apurimac,	Bā cā rāt'	Biloxi, be lox' e	Cadiz, kā' dīz	kās tēl yō' nā	Chimborazo,
āl jēr' z'	ā pōō rē māk'	Bād a jōs'	Bīng' en	Caen, kōn	Castile, kās tēl'	chīm bō rā' zō
Algeziras	A rā cān'	Bā' den	Bīng' ham ton	Caer mar' then	Cās tine', tēn	Chī' na
āl je zē' ras	Ar' al	Bāg dād'	Bīrmīng' um	Caer nar' von	Cāt a lō' nī a	Chīn' cha
A lī ās' kā	A rāp' a hōē	Ba hā' maŷ	bēr' mīng ūm	Cairngorm,	Catania,	Chīn chīl' lā
Al lā ha bād'	Areh' ān' ġēl	Bahia, bā ē' ā	Blenheim,	kār n ġōrm'	kā tā' nē ā	Chīp' pe wā
Al le ġhā' ny,	Arcole, ār kō' lā	Bāhr ēl Gha za	blēn' īm	Cairo,	Cat te gat'	Chīriqui,
Allegheny,	Ardenes,	Baikal, bī' kāl	Bō den See'	kār' o, U. S.,	Caucasus,	chē rē kē'
āl ī ġā' nī	ār dēn'	Bāl ā klā' vā	Bō ġō tā'	kī' rō, Egypt.	kạ' ka sūs	Choctaw-
Al mā dēn'	Ar ē' nā	Bāl ē ā' r' īc	Bō hē' mī ā	Calabar,	Cay ca' sian	hatchee,
Alsace, āl' sās	Arequipa,	Balīze, bā lēz'	Bō hē' mī ā	kāl a bār'	Cayn pōōr'	chōc tạ hāch' ē
Altai, āl tī'	ā ra kē' pā	Bāl kām'	Bō hē' mī ā	Ca lā' brī a	Cāy ēnne',	Cholula,
Al ta ma hā'	Argenteuil,	Bāl ī na slōē'	Bo līv' ī a	Calais,	Cay mans', ki	chō lōō' lā
Alton, āl' ton	ār zhōn tuīl'	Ballston Spa,	Bologna,	kāl ā', French.	Cayuga,	Christiania,
Al tōō' na	Ar' ġēn tīnē	bāl' ston spā	bō lōn' yā	kāl' īs, U. S.	kā yōō' ġā	krīs te ā' ne ā

Christian shāab'	Děl' hī, Hind.	Foggia, fōd' jā	Hā wai' i	Jungfrau,	Lē' ōn	Ma rēn' gō
Chud' lēi' gā	Děl' hī, U. S.	Fōnd' dū Lāe'	Hāy' tī	yōōng' frow	Le Puy, lū pwē'	Mār ga rī' ta
Chiquisaca,	Dēm er ā' ra	Fon ta' in oy'	Hēb' rī dēs	Jū nī ā' a	Lēy' den	Mā rī ēt' ta
chōō ke sā' kă	Dēr' b'y	Fōr mēn tē' rā, tā	Hee' la	Jū' rā	Lī bē' rī a	Mār' mo ra
Cienfuegos,	Des Chutes,	Fōr mō' sū	Hēi' dēl bērg	Jūt' land	Lieh' ten fēls	Marquesas,
sē ēn fwā' gos	dā shōōt'	Frēi' būrg	Hēi' e na		Līēgē	mār kă' sās
Cin cin nă' tī	De ser et'	Frīēs' land	Hēi' i gō lānd	Kāl a ma zōō'	Lillē, or Lisle, lēl	Mār quette', kēt
Circassia,	Des Moines,	Frī' o, frē' o	Hen lō' pēn	Kām chat' ka	Lī' ma, U. S.	Mār-sēi' lēs'
ser kăsh' i a	de moin'	Frōb' ish er	Her āt'	Ka nă' wā	lē' mă, Peru.	Mār tī' nez
Cobija, ko bē' hă	De troit'	Fron tīg' nae'	Hēr eu lă' ne ūm	Kankakee,	Limoges,	Mār tī nīqūē'
Cō' blēntz	Dhā wā' a ghī' rī	Fun ghāl', fōōn	Hērē' fōrd, fōrt	kang ka kē'	lē mōzh'	Māt a gōr' da
Cō' ghā bām' bā	DI ēppē'		Hī ā wā' tha	Kās kās' kī a	Līp' a rī	Māt a mō' ras
Cō' ghīn Chī' na	Dijon, dē zhōn'	Gă ē' tā	Hī dāl' gō	Ka tāk' din	Līs' bon	Ma tăn' zas
Cognac, kon yāk'	Dnieper, nē' per	Gāl a pā' gos	Hīm ā' la ya	Kēār' ney	Liu Kiu	Mā tă păn'
Co hōēs'	Dniester, nēs' ter	Ga lē' na	Hin' dōō-Kōōsh	Kehl, kāl	Llanos, lyā' nos	Ma' tēh Chūnk'
Cōl' chēs ter	Dōm i nī' ea	Ga līc' i ā, līsh	Hin dōō stān'	Kel āt'	Lōeh Lō' mond	Mauna Loa,
Cō lī' mă	Dōn e gāl'	Gāl' i lēē	Ho āng Hō'	Kennebec,	Lōf fō' den	mōw' nă lō' ā
Cologne, or	Dōn' gō la	Gāl' lē, Point de	Hō bō' kēn	kēn e bēk'	Loire, lwār	Mauritius,
Koln, ko lōn'	Dōr' ches ter	Gal lī' nas	Hō hēn līnd' en	Kē' o kūk	Lōm' bar d'y	mă rīsh' i ūs
Cō lōm' bī ā	Dor dōōnē'	Gāl lī po līs'	Hohenzollērn,	Khār tōōm'	Los Angeles,	Mayence, mīntz
Cōl o rā' dō	Douro, dōō' rō	Gāl' ves ton	hō en tsōl' lern	Khī' vā	āng' ēl ēs	Mă zāt lān'
Cō măn' chē	Drō' ghe da	Gāl' wāy	Hōl' stān	Khō kăn'	Lōūgh Nēāgh	Mēē' ea
Comayagua,	Drōnt' hēm	Gām' bī a	Hōl' y hēād	Khī' ber Pass	Lou i gī ā' na	Me dī' na
kō mī ā' gwā	Du būqūē', dōō	Gām' gēs	Hōl' yōkē	Kick a pōō'	Lou' is villē	Me hēr' rīn
Cō' mō	Dūn dāk'	Gā ronnē'	Hōm' burg,	Kīēl	Lourdes, lōōrd	Mēi' gēs
Cōm' o rīn	Dūn ēd' īn	Gās eo nādē'	bōōrg	Kī ēv'	Lōw' ell	Mēi' bōūrnē
Cōm' o rō	Dūn' kirk	Gēn e sēē'	Hōn dū' ras	Kīl kēn' h'y	Lu' bēēk	Mēm' phīs
Concord,	Du quesne, kăn	Gēn' o a	Hō nō lū' lū	Kīl lār' nēy	Lucayos	Mēn' ai
kōnk' urd	Dūr' hām	Gēy' sers	Hōū sa tōn' ic	Kī u' shī u	loo kī' oce	Mēn dō' cī' nō
Cōn gā rē'		Ghā' ts	Hōū' ton	Klā' math	Lu cerne'	Mendoza,
Cōn' nāgh	Eau Claire,	Ghēt	Hu ē', hōō	Kō' nīgs bērg	Lūck' now	mēn dō' thā
Con nēē' i ēūt	ō klār'	Gī brāl' tar	Hūm' bōldt	Kōō' te nāi	Lux' ēm būrg	Me nōm' o nēē
Cōn trē' rās	Ee uā dōr'	Gīla, hē' lā	Hū' ron	Kotzebue,	Lū zōn'	Mēn tō' nē,
Cō pen hā' gēn	E dī' na	Gīl bō' a	H'y der a bād'	ko' se bū		Mēr' cēd'
Coquimbo,	Ed' in burgh,	Gīl' e ad		Kōr do fān'	Mă cā' ō	Mēr' i den
kō kēm' bō	būr ro	Gironde,		Kuen Lun,	Ma eās' sar	Mēr' th'y' T'y d' vīl
Cōr' dō vā	Ed' is to	zhē rond'	I' ber villē	kwēn lōōn'	Mă ē dō' nī a	Mēr' rī mae
Cō rē' a	E gī' na	Glās' gōw	I' da hō	Ku lu Lun	Mackinac,	Mēr' gēy
Cōr fū'	Eg' re	Gloucester,	Ig nă' cī ō	Kū' rīl	mak' i nă	Mēs sī' nă
Cōr' īnth	Eider, i' der	glōs' ter	Il lă mă' nī, eel yā	Kūr ra chē'	Mă eon', Fr.	Mēūē
Cōr' pūs Chrī's tī	Elbē	Gōn zā' lēs	Il lī nois', noi		mă' kun, U. S.	Mī ām' i
Cōr rī ēn' tēs	El Do rā' dō	Gō' thā	Il l'y' i a	Lăb ra dōr'	Ma dēy' ra	Mīch' i gān
Cōr' sī ea	El' gīn	Gōthard, gō tār'	In ter lăch' en	Lăē' ea dīvēs	Ma drās'	Mī lān, U. S.
Cōs' ta Rī' cā	El Pă' sō dēl	Gră nă' dă	I ō' nī a	Lă chīnē'	Mă' drē de Dī' ōs	Mīl' an, Italy.
Cote d'Or,	Nōr' tē	Greenwich,	I' o wā	Lăck a wān' na	Măd rīd', Sp.	Mīllē Lăēs
kōt dor'	England,	grēn' i' j, Eng.	Ips' wīch	Lăd' ō gā	măd' rīd, U. S.	Mīl wān' kēē
Cō to pāx' i	īng' gīland	grēn' wīch,	Ir kōōtsk'	La drōnēs'	Măēl' strom	Mī nă tīt lān'
Coxsackie,	Ephesus,	U. S.	Iroquois', kwōi'	Lăf ay ette'	Măg' dā lă	Mīn' cīo, chō
kōōk sū' ke	ēf' e sūs	Guadalajara,	Ir ra wād' d'y	La Fourche,	Măg' da lēn	Mīn dānă' o
Cră' eōw	E pī' rūs	g wă dă lă hă' rā	Ir' t'ysh	lă fōōrsh	Măg' de būrg	Mīn ne āp' ō līs
Croatia,	E' rīn	Guadalquiver,	Isar, ē' zar	Lăgō Maggiore,	Ma gēl' lan	Mīn ne hă' hă
krō ā' shī a	Erz Gebirge,	g wă dāl ke vēr'	Is' ēhī ā	lă' gō mād' jō' rā	Mă gēn' tā	Mī qūē' lon'
Cronstadt,	ērts' gē bē' gē	Ghā da lūpe'	Is mă' i' lī a	Lă gū' nă, gōō	Magyar,	Mīr a mī' ghī'
krōn' stāt	Es pīr' i tō Săn' tō	Guanaajuato,	Is pa hăn'	Lă hōrē'	mōd' jōr	Mīss Iss' quoi
Cuenca,	Esquimau,	g wă nă h wă' tō	I tāl' ian, yan	Lăpō' as ter	Ma jōr' ea	Mō bīlē'
kwēn' kă	es' ke mō	Guar dă fuī'	Itasca, i tās' ka	Lăn' gūē' doe	Măl a bār'	Mō' ēhā
Cū mă nă'	Esquimaux,	Ghā tē mă' la	I u' ka	Lă Plă' tā	Ma lăē' ea	Mōd' ē nă
Cū ra cōā'	es' ke mōz	Guayaquil,	I vī' cā	La Paz, lă pāth	Măl' a gā	Mōg a dōrē'
Cuyahoga,	Etienne, St.	g wī ā kēl'		La Pōrtē'	Ma lăy'	Mō' hăw' k
kī a hō' gā	ā tē ēn'	Guaymas,	Jalapa, hă lă' pā	La rē' dō	Ma lăy' sī a, shī a	Mōl' dăw, dow
Cuz' eō, kōōz	Eū fāq' lă	g wī' mās	Ja nēi' rō, Rī' ō	La Săl' lē'	Măl' dīvē	Mōi dă' vī a
	Eu phrā' tēs	Guay' rā, Lă, gwī	Jan Mayen	Lassa, hlās' să	Malheur,	Mō līnē'
Dă hō' mēy	Eū rē' ka	Guelph, g wēlf	yān mī' en	Las Vegas	mal oor'	Mō lī' nō dēl Rēy
Da kō' ta	Eū' tăw	Ghērn' gēy	Japura,	Lău' en berg,	Măn' ches ter	Mōn' ā eō
Dalhousie,	Eux' ine, yux	Ghī ā' nă	hă pōō' ra	bōōrg	Măn chōō' rī a	Mo năd' noēk
dăl hōō' ze		Ghīl' ford	Jă' va	Lausanne,	Măn' dă lăy	Mō nōn gā hē' lă
Dăl' las	Faaborg, fō' borg	Ghīn' ēā	Joaquin, Săn,	lō zānn'	Ma nīl' a	Mōn tă' nă
Dalles, dălz	Fă' rōē	Ghū' an dōttē'	hō ā kēn'	Lau' terbrunnen	Măn i tō' hă'	Mōn tăq' k'
Dalmatia,	Făl' mōūth		Jorullo,	Lax' en burg	Măn i tōu' līn	Mont Blanc,
dăl mă' shī a	Fayal, fī āl'	Hăgūē	hō rōōl' yō	Lēg' hōrn	Măn i tō wōē'	mon bīōn'
Dănt' zle	Făr' i baul, bō	Hăi nău'	Jose, San, hō să'	Leicester,	Măn' tū a	Mōnt cālm'
Dăn' ūbē	Fēē' gēē, or Fī' jī	Hămp' shīrē	Juan, San,	lēs' ter	Manzanillo,	Mont Ceniz,
Dăr da nēl' lēs'	Fēr năn dī' nă	Ha vān' a	hōō ān'	Leigh, lē	măn thă nēl' yō	mon se nē'
Dă' rī ēn	Fēz zăn'	Hă' ver hīll, U. S.	Juan Fernandez,	Lēip' sic	Mă ră cāy' bō	Mōn tē nē' gō
Dărt' mōūth	Fīn is tērrē'	Havre, hă' ver	hōō ān' fēr-	Lēi' th	Marajo,	Mōn tē rēy'
Dēc' can	Fīō' rēs	Hav' re de Grăce	năn' dēth	Lē' na	mă ră zhō'	Mōn tē vīd' ē ō

Mönt mō rēn'cý	O dēs'sa	Piēd' mōnt	Ri' o Ja nēi' rō	Seār' bōrouh	Tamaulipas,	Valladolid,
Mon tī cēl' lō	O' gēē' chēē	Pierre, St.,	Ri' o Nē' grō	Scheldt, skēlt	tā mow lē' pās	vāl yā dō lēd'
Mönt pē' lī er	O kǎn' a gōn	sǎn pe ār'	Rip' on	Sehe nēē' ta dý	Tām pī' ēō	Vallejo,
Mönt re gī'	O ke fī nō' kee	Pil ēō mǎy' ō	Ri' vo lī	Sehīē dām'	Tān gī' ēr'	vāl yā' hō
Mōs' ēōw	O khōtsk'	Pī nāl'	Rō a nōkē'	Schlēs' wīg	Tā' os	Vāl pā rǎi' sō
Mō sēllē'	Ol' mutz	Pī' sǎ	Ro chēllē'	Sehō hǎr' lē	Tā pǎ' jos, zhōs	Vān eou' ver
Moultrie,	O lým' pī a	Pis' gǎh	Rōch' es ter	Sehūy' ler	Tā rī' fǎ	Venetia,
mōō' trī	O' ma hǎ	Plā' ģer villē	Rōs eōm' mon	Sch wē rin'	Tāqn' ton	vē nē' she ā
Mō zam bīqūē'	On on dǎ' ģa	Plā teau', tō	Rouen, rōō ōn'	Sēl' lī	Te hǎ' ma	Vēn e zuē' la
Mū' niēh	On tō nǎg' on	Pōl' y nē' sī a, shī	Rou mē' lī a	Sēl' ō	Teheran,	Vē' rā Cruz
Mūs eāt'	Ope lī' ka	Pompei,	Rō vē rē' dō	Sēl' ō to	te hrān'	krōōth
Mūs ea tīnē'	Ope lou' sas, lōō'	pōm pǎ' yē	Rýs' wīēk	Sēl' ū ātē	Tē huān tē pēē'	Vērd
Mūs ēō' gēē	O pōr' tō	Pōn' dī chēr rý		Seōt' land	Tēn er līfē'	Vēr ģēnnēs'
Mūs kē' ģon	O rǎn'	Pōnt char trǎin'		Seū' tā rī	Tērrē Bōnnē'	Ver sǎl' lēs'
	O rī nō' ēō	Pōn' tī āē		Sē āt' tē	Tērrē Haute,	Vicenza,
Nā ģa sǎ' kī	Orizaba,	Pō pǎy' ān'		Sēdān, sū dōn'	hōt	vē chēn' zǎ
Nān kīn'	ō re thǎ' bǎ	Po pō' ēāt ē pētī		Sēl' nē	Tē tōn'	Vī ēn' na
Nāntēs	O' sǎgē	Por' tī ce, che		Sēn e ģal'	Tezcūco,	Villa Real,
Nān tūēk' et	Osh' kōsh	Pōr' tō Rī' ēō		Sēv as tō' pōl	tēs kōō' ko	vēl' yā rǎ āl'
Nā' pǎ	Ost ēnd'	Port Said, sǎ ēd'		Sevres, sǎvr	Thāmēs, U. S.,	Vīn ģēnnēs'
Nā' plēs	Os' tī ā	Pōrts' mōūth		Seychelle,	tēnz, Eng.	Vīst' ū la
Nāsh' ū a	Os wē' ģō	Po tō' sī, U. S.		sa shēl'	Thēbēs	Vosges, vōzh
Nās' sǎh	Ot sē' ģō	Pō tō sī', S. A.		Shāng'-Hǎi	Thēiss	
Nā tǎl'	Ol' ta wa	Pow ha tǎn'		Shawangunk,	Ther mōp' y lāē	Wǎ' bǎsh
Nāth' ez	Ott um' wa	Pozzuoli,		shōn' ģūm	Thēss' a lī	Wǎ chū' sett
Natchitoches,	Ouachita,	pōt sōō' ō' lē		She boy' ģan	Thīb' ēt	Wāl lǎ' ēhī a
nǎk e tūsh'	wōsh' lī tā	Prāgūē		Shēn ān dō' āh	Ticino, te chē' nō	Wǎl' thām
Nā' tūck	Ou ray'	Prāi' rīē dū		Shī' rǎz	Tī ēn'-Tsin	Wār' wīēk, U. S.
Nau' ģa tuck	Ouse, ōōz	Chīēn		Sho shō' nēs	Tīf līs'	wōr' k, Eng.
Nau shōn'	O wē' ģō	Puerto Principe		Sī ām'	Tī' ģrīs	Wǎ ter ēē'
Nā' vǎ jō, hō	O wý' hēē	pwēr' tō prēn'-		Sī ēr' ra Lē ō' ne	Tīm būē' tōō	Wǎ ter lōō'
Nā vǎ rī' nō	O zǎrk'	se pǎ		Sī ēr' ra. Mǎ' drē	Tīt lī ēā' ēā	Wāh' kē' ģan
Nā vār' rǎ	O zau' kee			Sī ēr' ra Nē vǎ' dǎ	Tīv' o lī	Wē' ģer, zer
Nāv a sō' ta				Sī mō' ģǎ	To hōl'sk'	Wēst In' dīēs
Nēu ģhǎ tēl'	Pǎ chē' ēō	Pū' ģet		Sīm' plōn	Tō' kī ō	Wēst phǎ' lī a
Nēūē	Pǎ dāng'	Pū lās' kī		Sīn' ģa pōrē	To lē' dō	Wīch' lī tā
Nē' vǎ	Pǎd' ū a	Pūn jǎb'		Sīn ō' pē	Tōm bīg' beē	Wieliczka,
Nē vǎ' dǎ	Pa du' eah	Pu y' de Dōmē'		Sīn Dī' ē' ģō	Tōn' qūīn	wē lich' ka
New Braun' fēls,	Paīs' lēy	Pýr' e neēs		Sān Dūs' ký	Tō pē' ka	Wīēs bǎ' den
brown	Pa lāt' ka	Quebec,		Sān Fē lī' pē	To rōn' tō	Wīlkēs' bǎr rē
New' fōūnd land	Pa lēr' mo	kwe bēk'		Sān Fēr nǎn' dō	Tōr' res	Wīl lǎ' mēttē
New Or' le ans	Pǎl' es tīnē	Qūē rē' tā rō		Sān Ģǎ brī' ēl'	Tōr tu' ģas, tōō'	Wīn ne bǎ' ģō
Nez Perces,	Pǎ' lō Al' tō	Quīn e bāug'		Sān Ģǎ mōn	Tōū' lōn	Wīn' nī pēg
na pēr sa'	Pǎn a mǎ'	Qūī' tō		Sān Joaquin,	Tōū lōūē'	Winnipiseogee,
N' ģǎ' mī	Pa ō' lī			hō ā kēn'	Tōrs, tōōr	wīn e pe sǎ' ke
Nī āg' a ra	Papua, pǎp' ōō a	Ra ģīnē'		Sān Jose, hō sǎ'	Spǎ	Wī nō' na
Nī ēā rǎ' ģuā	Pǎ rǎ'	Rǎh' wāy		Sān Juan,	Spezzia, spāt' sēā	Woolwich,
Nīē	Pǎ rǎ' ģuāy', ģwī'	Rǎ' lēlūh		hōō ān'	Spītz bērg' en	wōōl' lī
Nīc o bār'	Pǎ rǎ' hī' bǎ	Rǎp lō ān'		Sān Lō rēn' zo,	Spreē, sprā	Worcester,
Nī ē' mes	Pǎr a mǎr' lī bō	Rǎppahān' hōēk		thō	Stā nō vōi'	wōōs' ter
Nī' ģer	Pǎ rǎ nǎ'	Rār' lī an		Sān Lū Is'	St. Bēr' nard	Wǎp' ģel
Nīmēs	Pǎ rī' mā	Rāt' lī bōn		O bīs' pō	St. Louis, lōō' is	Wý ō' mīng
Nī ō brǎ' ra	Pǎ' rōs	Ra vēn' na		Sān Mǎ tē' ō	Stēt tīn'	
Nīpū ōn'	Pās s a ma-	Rēād' līng		Sān Mī ģhēl'	Stōēk' hōlm	
Nōr' fōlk	quōd' dy	Rē cī' fē		Sān Rǎ fǎ ēl'	Strās' būrg	
Nōr' wīch, U. S.	Pat chōgūē'	Reggio, rad' jō		San Sāl vǎ dōr'	Strōm' bo lī	
nōr' lī, Eng.	Payta, pī' tā	Rēl' ēhēn bāēh		Sān' ta Fe'	Stūt' ģärt	
Nōt' tīng hām	Pē chē lēē'	Rēl' kī a vīk		Sān' tā Mǎ rī' ā	Sū ēz'	
Nō' va Seō' tī a,	Pe' ēōs	Rēnnēs		Sān tēē'	Sūf' fōlk	
shī a	Pē dēē'	Rēns' sē lāer		Sān tī ā' ģō	Su mǎ' trǎ, sōō	
Nō' va Zēm' bla	Pei'-Hō'	Rē sǎ' ēā dē		Sāōnē	Sūm bǎ' wa	
Nōv' ģō rōd	Pē' kīn	lǎ Pǎl' mā		Sǎ rǎ ģōs' sǎ	Sūn' da	
Nueces, nǎwǎ'ses	Pelew, pe lū'	Rēs tī ģōūchē'		Sār' a nǎē	Sū rī nām'	
Ný ās' sǎ	Pēm' bī na	Rhēā		Sār dīn' lī a	Sūs que hǎn' na	
	Pe nāng'	Rhīnē		Sās kǎtch' ē wān	Sū wǎ' nēē	
Oahu, ō ā' hōō	Pēn zānce', zǎnz'	Rhōnē		Sāh' ģa tūēk'	Sū wān'sē	
Oajaca, or Oax,	Pē ō' rī a	Rī āl' to		Sāh' ģer tīēs	Swān'sē	
wǎ hǎ' kǎ	Pē' pīn	Rī ģhe lieu', lōō		Sault St. Mǎ' rīē,	Swā' bī a	
O bēld'	Pēr nām bu' ēō,	Rīdeau, re dō'		sōō	Sýr' a eūē	
O' bī	bōō	Rīē' ģen-		Sǎ vǎn' nāh		
Oceania,	Pēt chō' rǎ	Ge bīrg' e		Sa voy'	Tā brēz'	
ō she ā' nī a	Philippine,	Rī' ģa		Sǎxē Cō' būrg	Tā ēō' mā	
Oe mūl' gēē	fil' ip līn	Rī' ģī		Saxony,	Tā hī' tī	
O ēō' nēē	Phoenix, fē' nīks	Rī mǎē'		sǎk' so ne	Tāl lǎ hās' se	
O' ēra eōkē	Pī chīn' chǎ	Rī' ō Chī' ēō		Seg' fēlī	Tāl lǎ hǎtch' ēē	
O' der	Pictou, pīk tōō'	Rī' o Grān' dē		Seān dī nǎ' vī a	Tāl lǎ pōō' sa	

